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ATLANTIC STRIPED BASS CONSERVATION ACT AUTHORIZATIONS

HEARING

BEFORE THE

SUBCOMMITTEE ON ENVIRONMENTAL PROTECTION

OF THE

COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS UNITED STATES SENATE

ONE HUNDREDTH CONGRESS

SECOND SESSION

ON

S. 2384

A BILL TO AUTHORIZE APPROPRIATIONS TO CARRY OUT THE ATLANTIC STRIPED BASS CONSERVATION ACT FOR FISCAL YEARS 1989 THROUGH 1991, AND FOR OTHER PURPOSES

MAY 25, 1988

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ATLANTIC STRIPED BASS CONSERVATION ACT AUTHORIZATIONS

WEDNESDAY, MAY 25, 1988

U.S. SENATE,
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS,
SUBCOMMITTEE ON ENVIRONMENTAL PROTECTION,
Washington, DC.

The subcommittee met, pursuant to notice, at 10:01 a.m., in room 406, Dirksen Senate Office Building, Hon. George J. Mitchell (chairman of the subcommittee) presiding.

Present: Senators Mitchell, Lautenberg, Chafee, Stafford, and Pressler.

Also present: Senator Mikulski.

OPENING STATEMENT OF HON. GEORGE J. MITCHELL, U.S. SENATOR FROM THE STATE OF MAINE

Senator MITCHELL. Good morning, ladies and gentlemen.

The Subcommittee on Environmental Protection convenes today to consider legislation introduced by Senator Chafee and myself to extend the Atlantic Striped Bass Conservation Act and the Emergency Striped Bass Research Study through fiscal year 1991.

Historically, the Atlantic striped bass has been an important commercial and sport fish from North Carolina to Maine, but populations of this fish, particularly in the Chesapeake Bay, declined dramatically during the past decade.

The Atlantic Striped Bass Conservation Act, enacted in 1984, recognized the severe decline of striped bass populations and encouraged the States to implement and enforce uniform regulations throughout the range of the species' migration. In 1986, Senator Chafee and I sponsored legislation that made a number of improvements in the act while retaining traditional State and Federal roles and responsibilities for fisheries management.

The structure of the Atlantic Striped Bass Conservation Act, as amended, has proven to be remarkably successful. The act relies on the States, through their representatives on the Atlantic States Marine Fisheries Commission, to develop and agree collectively on a plan for management of striped bass.

Because the commission does not have the authority to establish or enforce laws and regulations pertaining to the fisheries with which it is concerned, the act also relies on the U.S. Fish and Wildlife Service and National Marine Fisheries Service to ensure than an individual State carries out the plan.

The law gives the States the choice of either carrying out what their representatives on the commission approved or having the Federal Government impose a moratorium on striped bass fishing in their coastal waters. To date, no moratoria have had to be imposed, because the States, by and large, have demonstrated a strong commitment to the objectives of the commission's striped bass management plan.

I know, for instance, that the State of Maine has enacted legislation that establishes size limits and, more importantly, allows the Commissioner of Marine Resources to adjust those limits to ensure compliance with any future change in the commission's plans.

One result already apparent from the States' efforts has been reports of increased reproduction from areas other than the Chesapeake Bay. In New York, the production of young striped bass in 1987 in the Hudson River was the highest since 1979. Virginia also has reported finding very high reproduction in its rivers of the lower Chesapeake Bay.

In addition, I am pleased to report that there have been young striped bass found in the Kennebec River system of Maine. These fish are thought to be the first ones produced as a result of previous efforts to stock those waters with striped bass.

These early results give us cause for optimism about the future of the striped bass fishery along the Atlantic coast. We should not, however, let some initial success lure us into dismantling the effective combination of Federal and State conservation measures that have led us this far. Rather, our purpose here this morning is to determine whether we are doing enough.

Specifically, we have asked the witnesses to review the status of the Atlantic striped bass stocks. We have also asked that they review the findings of the Emergency Striped Bass Research Study to help us determine whether additional research is needed to identify the causes of the striped bass decline and the remedial actions likely to reverse this decline.

Finally, we have asked that they review implementation of the Atlantic Striped Bass Conservation Act to assist us in determining whether changes are warranted in present conservation measures or in the act's provisions.

We will hear first from representatives of the U.S. Fish and Wildlife Service and National Marine Fisheries Service who have prepared a brief slide presentation to assist us in our review of these matters. We welcome them and the other witnesses scheduled to appear and look forward to what they have to say.

Before calling on the first witness, I would like to call upon my colleague, the distinguished former chairman of this committee and a man who has done more than any other person to preserve and restore the striped bass, Senator Chafee.

OPENING STATEMENT OF HON. JOHN H. CHAFEE, U.S. SENATOR FROM THE STATE OF RHODE ISLAND

Senator CHAFEE. Thank you very much, Mr. Chairman.

I want to thank you for holding this hearing today, and I want to thank you for the tremendous leadership that you have given to this and a host of other environmental measures that are so impor-

tant to our Nation and to all States but, of course, the coastal States in particular.

I first became aware of the plight of the striped bass in 1979 when one of your fellow Mainers John Coles' book came to my attention, and I read that and then read the articles about what was happening. So, we set up legislation providing for a study which many of the individuals who will testify today were involved in.

Then, in 1984, as you noted, we passed the Atlantic Striped Bass Conservation Act, and 1986, we extended it. So, I am anxious to see how all this is working out, and it is encouraging to know that the stripers are coming back in many sections of the country. However, as you noted, the Chesapeake is still a puzzling and disturbing area, one of the richest areas in the past but that, from the information I have, doesn't seem to be producing stock as it did in the past.

So, we look forward to hearing what the witnesses have to say.

Thank you, Mr. Chairman.

Senator MITCHELL. Thank you, Senator Chafee.

The first panel includes Mr. Gary Edwards, Assistant Director for Fisheries, U.S. Fish and Wildlife Service; Mr. James Douglas, Deputy Assistant Administrator for Fisheries, the National Oceanic and Atmospheric Administration; Mr. Irwin Alperin, Executive Director of the Atlantic States Marine Fisheries Commission; and Mr. Pete Jensen, Director of Fisheries, Department of Natural Resources, Annapolis, MD.

Gentlemen, welcome. Mr. Edwards, I understand you want to begin with a slide presentation.

Mr. EDWARDS. Thank you, Mr. Chairman.

As you indicated in your request both to the Fish and Wildlife Service and the National Marine Fisheries Service, you asked in our testimony today before you that we review the status of the Atlantic striped bass stocks. To facilitate that review, we have asked our two lead scientists from our appropriate agencies who have the primary responsibility for overseeing the research that is conducted under the Striped Bass Study Act to brief you this morning on that status and the work that has been done under the act.

So, with me this morning is Dr. Anne Richards from the National Marine Fisheries Service. Dr. Richards received her Ph.D from the University of Rhode Island, and she is currently stationed at the Northeast Fisheries Center in Woods Hole.

Also accompanying her representing the Fish and Wildlife Service is Dr. Paul Rago who received his Ph.D from the University of Michigan and is currently stationed at the Fish and Wildlife Service's National Fisheries Research Center in Leetown, WV.

With your permission, Mr. Chairman, we will go ahead at this time and have them present you with their information.

Ms. RICHARDS. Thank you, Mr. Edwards.

During the 1970's, precipitous declines in the landings of striped bass, coupled with consistently poor juvenile production in the Chesapeake Bay, created a great deal of concern over the fate of the striped bass in the Northeastern United States. One of the responses to this concern was the establishment of the Emergency Striped Bass Study, also often called the Chafee Study.

The are two primary goals of the emergency study. One is to determine the status of the stocks of the striped bass, and the other is to try to establish the causes for the decline of the striped bass. In my presentation today, I will be reviewing for you the current status of the stocks, and my colleague, Dr. Rago, will discuss the causes for the decline.

Before I review the status of the stocks, it is important to remind you of several very important management events which occurred during the 1980's and which have had a very significant impact on what we see today as far as the status of the stocks.

In 1981, the Atlantic States Marine Fisheries Commission's striped bass management plan was adopted by the States and called for increases in the minimum size limits in many areas. In 1984, the plan was amended to decrease fishing mortality by 55 percent. In 1985, the plan was again amended, this time to protect 95 percent of Chesapeake stock females of the 1982 and subsequent year classes until 95 percent could spawn at least once.

Also in 1985, the States of Maryland and Delaware imposed moratoria on striped bass fishing in their States.

At present, we still have these moratoria in place. We also have very high size limits and other restrictive measures to protect the striped bass stocks.

To determine the status of the stocks of the striped bass, we conduct three types of monitoring programs. These monitoring programs are conducted not only through the emergency study but also by States and universities in a very cooperative setting, and they have yielded a great deal of information.

The three types of monitoring programs are surveys to estimate juvenile abundance in the producing area, surveys to examine the condition of the spawning stocks, and also a sampling program which was just begun to look at the coastal migratory stocks.

In addition to these three programs, the emergency study established in 1986 a very extensive tagging program to also provide information on the migratory patterns of the stocks and also their mortality rates. To date, over 28,000 striped bass have been tagged through that program.

I would like to describe for you now briefly the results of the surveys for juvenile abundance.

Coastal fisheries for striped bass in the recent past have relied on juvenile production in the Hudson River, in the Chesapeake Bay, and also to a limited extent probably from the Roanoke River. The Delaware system was once important for producing striped bass, but because of poor water quality conditions in that system, there has not been significant production there in several decades.

The Chesapeake Bay has historically provided the bulk of the fish for the coastal fishery. However, as you know, in recent years, that has not been the case.

This slide shows the results of the surveys for juvenile abundance in the Hudson River, in the Chesapeake Bay, and in the Roanoke River system. The most salient feature, really, of striped bass production is that there are years of very good production interspersed with years of very poor or only average production. In the past, those years of good production supported the fisheries during the

However, from the early 1970's through 1986, there was no exceptional production in the Chesapeake Bay, and this, of course, led to the decline in the landings and the concern over the stocks. However, in 1987, we see a very encouraging sign in Virginia. They have the highest juvenile abundance index on record.

In the Hudson River, there has not been any sign of a decline in that system, and in 1987, the Hudson also had their highest year on record for juvenile abundance.

The Roanoke stock has had consistently poor production since the mid 1970's.

I would like to describe now the results of the surveys of the adult stock on the spawning grounds.

This slide shows the age composition of males on the Maryland spawning grounds in 1982, 1984, and 1987. The cross hatched bars represent those year classes that have been protected by those restrictive management measures.

What you can see here is that in 1982, there are very few males present. In 1984, we begin to see those protected year classes on this spawning grounds as they mature at age two, and by 1987, there is a very good resurgence of males on the spawning grounds in Maryland.

If we look at females on the same scale as the males, you see that we haven't seen that same pattern of resurgence. However, we don't expect to see the females appearing at the same rate as the males because they mature later than the males do.

If we look at these data on an expanded scale, again, this is age composition of females on the spawning grounds, we see that until 1987, the bulk of the female spawning stock was composed of fish that were 9 years or older. These are remnants of the last 1960's and early 1970's year classes, and they were providing the majority of the reproductive potential of the stock and very little was coming in from earlier year classes.

We do begin to see the protected year classes appearing at age five in 1987. However, they weren't as abundant as we expected to see based on our information on maturation rates, and we now have two independent sources of information which suggest that the female striped bass are maturing later than we previously thought. This, of course, has some important implications for the rates of recovery of the stock.

Similar types of sampling are going on in Virginia, and they show a similar pattern for males, and they show a better resurgence of females in Virginia than we see in Maryland, and we believe that this has a good deal to do with why the juvenile indices have improved in the Virginia area.

I would like to briefly describe now a new sampling program to sample the coastal stock in the fall. We began this program in 1987. The sampling is conducted along the coast of Long Island, and it samples the mixed stocks, the Hudson and the Chesapeake stocks as they migrate past that point.

Here are the results of last year's sampling. Again, this is the age composition of the sample that was taken from September through November, and again, you can very clearly see the effects of the protective management measures in this sample as well. The bulk of the stock is composed of age five or younger fish.

Just to summarize my presentation on the status of the stocks, we see very encouraging juvenile production in Virginia's portion of the Chesapeake Bay and in the Hudson River. However, juvenile production in the Delaware River system, the Maryland portion of Chesapeake Bay, and in the Roanoke remains very poor.

The results of the adult stock sampling clearly show the effects of the protective management measures which have been in place since the mid 1980's, and I think it is also clear that this type of protection is very important and needs to continue if we are going to be able to ensure that the stock does recover.

Now I would like to turn the floor over to Dr. Rago.

Mr. RAGO. Thank you.

For the past decade or so, the word "declining" has usually been associated with striped bass. Today, I want to describe a more encouraging picture. This optimism stems not so much from the current abundance of striped bass as it does from the stringent management measures that have been taken to restore the stock.

In a very real sense, we are in the midst of a large-scale population experiment. In this experiment, we have the unique opportunity, through the cooperative efforts of the State and Federal Governments and through the sacrifices of commercial and recreational fishermen, to witness the recovery of a major and valuable fishery resource. Clearly, many challenges remain, but the stage for recovery has been set.

When the striped bass studies began, there were seven major hypotheses advanced as factors responsible for their decline. For some of these factors, the evidence is very limited. For other factors, the historical record is insufficient to describe whether these were key factors.

For a moment, I would like to describe the studies we have done on acid rain.

A comprehensive analysis of historical data was done for all the major spawning rivers along the East Coast. In that study, there was no evidence of trends of decreasing pH, nor was there any statistically significant increase in the frequency of low pH events.

Two factors, however, stand out as being critically important, contaminants and over harvesting. In the next few slides, I would like to go through the scientific rationale and the process of elimination by which we have begun studies of this type.

As you recall, two disconcerting trends beginning in 1973 were the stimulus for the research program that began. The first was a very rapid decline in total commercial landings along the East Coast at the rate of about 22 percent per year. This was also coupled with, and perhaps more ominously, a near absence of very strong year classes.

So, the strategy, then, in terms of investigating whether over harvest or contaminants were involved in these two trends was to develop the experimental techniques to evaluate contaminants in a field context and, simultaneously, look at the effects of fishing pressure.

Laboratory studies have been conducted on striped bass. We have found that they are very sensitive to lowered pH and to elevated aluminum levels. They are among the most sensitive species tested.

Simultaneously, we have conducted field studies using what we call in situ chambers where the fish are exposed to river water at various points in the Chesapeake Bay system. Our sampling efforts have focused on the Maryland portion of the bay, primarily in an attempt to relate the contaminants work to the long time series of juvenile indices. We have had studies in the Potomac, the C&D Canal, the Choptank, and the Nanticoke.

This slide summarizes the results of those research efforts. The boxes indicate where the studies were done and the years, and the color of the box indicates the relative survival that was observed during the period of the study. As you can see, there is considerable variation in terms of the relative survival rates that were observed during these studies.

Now, one aspect of these studies that needs to be pointed out is that these were relatively short in duration and did not cover the entire spawning period. In 1988, we expanded our efforts considerably and now have recently completed research efforts and field sampling programs in which bioassays were conducted over the entire spawning period, and we had continuous water quality monitoring in each of these systems. We measured pH, conductivity, temperature, and so forth.

Next, I would like to turn my attention to fishing mortality. One of the primary means in which we evaluate fishing mortality is through mathematical models. The parameters that we use in these models and the development of these models are closely coordinated with the States, and we recognize that we depend very heavily upon the research efforts that the States have taken on, notably Maryland, in terms of developing models of this type.

As you can see, this is a correlation or relationship between predicted yield and observed yield over the period. On the basis of this very tight ability to correlate with past observations, we have gone forward in terms of predicting and trying to estimate the status of the stock.

Here we have the estimated abundance of fish between age three and seven. During 1987, as you can see, we reached a threshold of average level for the 1974 to 1979 period. Next year, we predict that we will exceed that threshold.

However, this threshold is one in which the stock was declining at a very rapid rate. If we compare it to a situation where the stock was in a more healthy state, the 1968 through 1973 period, we see that we still have a ways to go in terms of restoring these fish.

These are fish which are pre-reproductive, and, also, they are the ones that are expected to have responded most quickly to the management changes that have taken place.

However, it needs to be pointed out in spite of the relative increased abundance occurring in these fish that the hard-won gains of the program would be quickly eroded. Here is a projection of the young of the year index under the assumption that a full-scale commercial and recreational harvest would occur beginning in 1989 at historical levels. That needs to be emphasized that this is not any type of fishery opening up. It is a fishery at the levels of mortality that occurred during the period of the decline.

As you can see, the gains would be quickly eroded within a five-year period.

To summarize, the changes in the fishing mortality has resulted in a protection of the existing stock. We have increased our understanding of the biology, particularly maturation and migration rates, and we have increased the likelihood of a strong year class.

By no means have we guaranteed that one will come about, but the probability has been increased.

The role of contaminants remains unresolved. We have the expectation that reproductive output in terms of eggs should increase, but we have not been able to totally eliminate the role of contaminants in the decline.

In terms of ongoing activities, we are focused on two major areas, stock assessment and contaminants. This includes population monitoring, as Dr. Richards has noted, methods for improved stock identification, a comprehensive tagging program of wild and hatchery fish, and mathematical modeling.

This is coupled with a contaminants program that is field oriented. It has extensive coverage both geographically and temporally, and a program oriented toward the role of contaminants in recruitment variation.

In summary, considerable progress has been made toward understanding the decline of striped bass. The key factors have been identified, and experiments are underway to test the putative mechanisms. More importantly, the emergency studies and other efforts by the States have laid the basis for the sound scientific management of striped bass.

Mr. Chairman, that concludes our presentation. Thank you.

Senator MITCHELL. Thank you very much for a very informative presentation.

We are pleased now to be joined by the distinguished former chairman of the full committee, Senator Stafford.

Senator, do you have an opening statement you wish to make?

Senator STAFFORD. Thank you, Mr. Chairman.

I have no opening statement except to say that during the last years that it was legal to catch bass on Chesapeake Bay, I did my inadvertent bit to preserve the species by failing to catch any at all. And looking at that last picture, I am glad none of my children ever saw it, because I explained to them some years ago that the largest stripers in the bay usually ran about 20 inches long.

Senator MITCHELL. Thank you very much, Mr. Chairman.

We will now proceed to hear from the witnesses. Under the rules of the committee, each witness is asked to summarize their written statement; and to keep in their oral presentation to no more than 5 minutes. The full text of your statements will be included in the record.

We will begin with Mr. Edwards.

STATEMENT OF GARY EDWARDS, ASSISTANT DIRECTOR FOR FISHERIES, FISH AND WILDLIFE SERVICE

Mr. EDWARDS. Mr. Chairman, I am very pleased to appear before you today to discuss reauthorization of two statutes, the Atlantic Striped Bass Conservation Act and the Striped Bass Study Act.

Both statutes have been central to cooperative efforts to restore Atlantic coastal migratory stocks of striped bass. These cooperative

efforts have reversed the decline of these important fishery resources and have provided the foundation for their successful restoration.

We recommend reauthorization of the Conservation Act for 2 years, but believe extension of the funding authorization for the study act is unnecessary. With the stock size increasing, we believe that the States should assume this study responsibility. To the extent that Federal studies are required, they may be completed under other authorities.

The Conservation Act represents an unqualified success story. Full implementation of the Atlantic States Marine Fisheries Commission's amended interstate striped bass management plan is largely attributable to the consensus and cooperative spirit engendered by the conservation act. Implementation of the conservation act has been effective in halting and beginning to reverse the decline of Atlantic migratory striped bass stocks.

Without this act, the substantial progress since 1984 in reversing the decline may be lost. To avoid this outcome, the Administration recommends a 2-year extension and reauthorization of the act.

A 2-year period would provide the necessary time to allow completion of the commission's new fishery management plan as well as ensuring that the plan is thoroughly reviewed before being approved and implement. This period would also facilitate an orderly and effective transition to the new cooperative fishery management regime to be developed by the commission.

Because of potential constitutional problems and as a practical matter, the new plan should be final before it is incorporated into the Conservation Act by the Congress. However, the new plan is still under development and may not be completed and approved by the commission prior to expiration of the Conservation Act.

In particular, there may be insufficient time to reach a consensus among the States concerning the basis for allocating allowable harvests between commercial and recreational fisheries and among the 14 jurisdictions involved. This consensus is important in establishing the new plan as the technical basis for subsequent application of the conservation act.

The appropriations authority for the Striped Bass Study Act will expire at the end of fiscal year 1988. The Administration does not support reauthorization for the reasons mentioned previously.

After 8 years of concentrated research, it is now clear that the decline of Atlantic coastal migratory stocks of striped bass is a more complex and difficult problem than originally perceived. However, substantial new information and insight about these stocks have been gained from the cooperative studies conducted under the authority of the study act.

If harvest restrictions can be maintained for several more years, a substantial increase in spawning may be realized from the large striped bass broodstock that now exists due to the sacrifices of fishermen from Maine to North Carolina. This increased spawning potential provides the opportunity to determine whether the population decline was due to over harvest or to reproductive failure caused by some alternative factor, principally high levels of contaminants in spawning areas.

Mr. Chairman, this concludes my prepared testimony. I would be pleased to respond to any questions you or other members of the subcommittee may have.

Senator MITCHELL. Thank you very much, Mr. Edwards.

Mr. Douglas.

STATEMENT OF JAMES E. DOUGLAS, DEPUTY ASSISTANT ADMINISTRATOR FOR FISHERIES, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

Mr. DOUGLAS. Thank you, Mr. Chairman.

I am James Douglas, Deputy Assistant Administrator for Fisheries for NOAA.

You have already been introduced to Dr. Richards who is certainly one of our bright, shining young scientists. I noticed during the introduction that Senator Chafee appropriately nodded his head when it was acknowledged that Dr. Richards took part of her education in Rhode Island. Not to be outdone, and so as Maine can also take credit, Senator Mitchell, she got her undergraduate degree from Colby.

Senator CHAFEE. I would say she is a real winner before this subcommittee.

Mr. DOUGLAS. I figure, Senator, that I have at least two out of three votes on this committee, or she does anyway.

Senator MITCHELL. Did you ever pass through Vermont, Ms. Richards?

Senator STAFFORD. Mr. Chairman, we have caught no striped bass in Lake Champlain that I know of.

Mr. DOUGLAS. Mr. Chairman, as the subcommittee has seen, there really are encouraging signs in some of the juvenile indices in the last year, and it appears that the management regime that has been so carefully and painstakingly worked out by the States, through the Atlantic States Marine Fisheries Commission, is really showing signs of success.

However, we are really not there yet. Striped bass abundance is still well below what I know the States hope to achieve over time from their actions, and I want it on the record that the National Marine Fisheries Service applauds the Atlantic States Marine Fisheries Commission and all of its States for their arduous work and courageous actions in really helping this noble species.

It certainly appears from the data that the Atlantic Striped Bass Conservation Act has indeed been a driving force necessary to gain the consensus and relative uniformity of action among the States in order to achieve the beginnings of success that we have seen today. Accordingly, NOAA favors reauthorization of this act.

We believe it is necessary to retain interstate cooperation, or else the gains that appear on the threshold may be lost, and it would indeed be tragic if we let this happen.

However, as my colleague from the U.S. Fish and Wildlife Service has stated, NOAA does not support a continuation of the emergency study provisions. We believe that much good work has been done, as you have seen, but that the major work remaining is primarily monitoring and that this can be done by the respective

States and, that in these times of fiscal austerity, this is an area where Federal money need not be reinstated.

Mr. Chairman, that basically is the synopsis of my testimony. I have retained Dr. Richards here at the table in case there are any questions. We would be happy to answer them.

Senator MITCHELL. Thank you, Mr. Douglas.

Mr. Alperin.

STATEMENT OF IRWIN M. ALPERIN, EXECUTIVE DIRECTOR, ATLANTIC STATES MARINE FISHERIES COMMISSION

Mr. ALPERIN. Thank you, Mr. Chairman and members of the subcommittee.

I am Irwin Alperin, Executive Director of the Atlantic States Marine Fisheries Commission. I appreciate the opportunity to appear before your subcommittee today on behalf of the commission's member States, particularly the 12 States participating in the commission's striped bass fishery management program.

I want to relay the commission's views on S. 2384 which would reauthorize the Atlantic Striped Bass Conservation Act through September 1991.

The Atlantic coast States have been managing striped bass under the auspices of the commission's interstate fisheries management program since 1981. We believe that current restrictions are responsible for the universally observed rebounding of the striped bass stock. In particular, protection of the females of the 1982 and subsequent year classes has been very important to our efforts.

To achieve this protection, all fishing effort along the Atlantic coast has been severely curtailed. A number of States went further than amendment 3 to our program required and imposed moratoria on striped bass harvests in their States.

Minimal commercial landings, low possession limits on recreational fishermen, and seasonal closures are all working to allow the Chesapeake Bay striped bass stock to continue its recover.

Also, enforcement of striped bass regulations along the coast has been very good. The most recent ASMFC Law Enforcement Committee striped bass reports indicate that law enforcement agencies have placed a high priority on striped bass protection, that the courts are treating violations of striped bass regulations seriously, and there is good public acceptance of striped bass regulations.

A key component of our current striped bass management is monitoring striped bass populations. In the past few years, we have seen increased abundance of juvenile fish in the Hudson River, Virginia's portion of Chesapeake Bay, and some Maryland rivers. Fish of the 1982 and perhaps the 1983 year classes are abundant and have a high potential spawning biomass. This spawning biomass will only be realized next year as the 1982 year class becomes fully mature.

On the down side, however, the upper portion of Chesapeake Bay which, in the past, was the mother lode of East Coast striped bass production has yet to show any signs of recovery. Because this area was so important historically, we feel the urgent need to continue protecting East Coast striped bass until the upper Chesapeake Bay recovers.

The Commission is currently revising our striped bass fishery management plan to meet current and projected needs of the fishery. We are looking at long-term strategies to achieve the goals of the fishery management plan which are to conserve, protect, and restore Atlantic coast migratory stocks of striped bass.

Among the issues that are being discussed are how to liberalize fishing regulations while maintaining adequate stock protection, taking geographic variation in fish size and abundance into account with appropriate area and seasonal closures and size limits.

The foundation of the revised fishery management plan regulations will be controlling the overall fishing mortality at some acceptable level. This F-based management, as it is called, will be responsive to stock conditions but will require adequate, continual monitoring of striped bass populations.

We hope to have the fishery management plan ready for Commission approval at our annual meeting in September.

On the need for reauthorization of the act, the commission staff polled all ASMFC Commissioners to develop a consensus on reauthorization of the act. Commissioners were asked whether they favored or opposed reauthorization and whether they would suggest any changes to the act.

The results were that 82 percent of the commissioners favored reauthorization of the act, 13 percent opposed reauthorization, and 5 percent abstained from voting. When this individual canvass is combined into State results, 13 State are in favor of reauthorization, 1 is opposed, and 1 State canceled out due to opposing votes.

Three commissioners proposed amendment that are mentioned in our written statement.

I would like to mention a few things that we strongly believe are needed for the long-term management of striped bass. As I mentioned several times, adequate population monitoring is a must for any fishery management regime. We need long-term cooperative tagging, stock discrimination studies, and biological studies of striped bass to estimate population parameters which are required for F-based management.

Emergency striped bass study funds provided a vital significant portion of the money used for striped bass population monitoring and establishment of a firm data base and are, therefore, imperative to our current efforts. Due to the importance of this program, ASMFC has annually coordinated workshops to review the past year's Emergency Striped Bass Study efforts and results as well as the findings of our Statistical and Scientific Committee.

Mr. Chairman and members of the subcommittee, this concludes my prepared oral testimony today, and I thank you for allowing me to present these views. I am prepared to answer any questions I can.

Senator MITCHELL. Thank you very much, Mr. Alperin.

We are pleased to be joined by the distinguished Senator from Maryland, Senator Mikulski, who has been so active in protection and preservation of the Chesapeake Bay.

Senator Mikulski.

OPENING STATEMENT OF HON. BARBARA A. MIKULSKI, U.S. SENATOR FROM THE STATE OF MARYLAND

Senator MIKULSKI. Thank you very much, Chairman Mitchell, for inviting me to sit with this subcommittee today.

As you know, this is an important subject to the people of Maryland and all of those on the Bay, indeed, everyone on the Atlantic. One of the things we know is that the rockfish are coming back, and once they come, we want to be sure that there is a place to stay.

I want to welcome our witness, Mr. Peter Jensen, who manages and is the Director of Fisheries for the Maryland Department of Natural Resources. Often unusual among bureaucrats who have to be bearers of good news, he himself is quite competent and enjoys the respect of both the Maryland fishing industry, the sports fishermen, the watermen, as well as the scientists that he needs to rely on for technical advice.

I think the committee will find his testimony very useful. Mr. Jensen is really a substantial professional.

Senator MITCHELL. Thank you very much, Senator Mikulski.

Mr. Jensen, let's see if you can live up to those glowing remarks?

Mr. JENSEN. Yes, a Herculean task.

STATEMENT OF PETE JENSEN, DIRECTOR OF FISHERIES, DEPARTMENT OF NATURAL RESOURCES, STATE OF MARYLAND

Mr. JENSEN. Members of the committee, thank you for the opportunity to present our views on S. 2384.

Maryland was a key State in efforts which resulted in the development and adoption of the coastal fishery management plan, and the Atlantic Striped Bass Conservation Act has been a strong influence in fostering the joint management. I am here today to testify in support of reauthorization of that act and also the continuation of funding for the emergency striped bass study.

The recovery of the striped bass has been rather dramatic in Chesapeake Bay where we have maintained a total moratorium since 1985. We now see evidence of recovery, particularly the presence of the 1982 year class, in the Bay spawning population, and we are very much encouraged by what we are seeing in the Bay, particularly in the upper Bay where it has been said many times we have not had good reproduction in recent years, but we are very optimistic about what we see happening.

We believe this strategy of protecting the fish until 95 percent of them can spawn is going to work, and we look forward to the day when it will.

In addition to what has been reported on the resurgence of the population, I also want to point out that through a very innovative cooperative arrangement with the U.S. Fish and Wildlife Service and a hatchery facility we have in the State of Maryland. Last year also with the cooperation of some power companies, we tagged and released over 800,000 striped bass into the system, and we fully expect that is going to be a big contribution to the recovery of this stock also.

The remaining objective to be reached is a 3-year running average of 8 in our young of the year. When this objective is

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achieved, the stocks will be determined to be restored and capable of sustaining a fishery. In plain words, we believe we need to begin planning a new phase of striped bass management, managing a fishery on a recovered population so that we do not repeat the boom and bust cycles of the past.

In that regard, Mr. Chairman, I would point out that we have already convened within the State of Maryland a group of conservationists, State officials, legislators, commercial and sport fishermen to begin discussing what the fishery should look like when we do achieve our objective, and I will report to you that there is absolutely no disagreement that we will not return to the unlimited fishery of the past which led us to the decline of the stock. I think to a person on that committee, to their credit, they are already talking about how we responsibly control any future fishery.

In addition to supporting the reauthorization of the act, we would like to offer two suggestions for your consideration. One, we believe you should consider an amendment to require the secretaries to impose applicable management measures in State waters if the States are determined to be not in compliance by the Atlantic States Marine Fisheries Commission. Because we must look forward to managing a fishery rather than restoring a depleted population, this would be an appropriate action.

Recall that one of the underlying principles of the commission plan is to have unified management measures in each State to avoid the confusion of different and conflicting State regulations that were determined to be a major problem prior to the present plan.

Second, we believe you should consider an amendment to the act to include a provision that striped bass caught in the EEZ must conform to the regulations of the State where landed. Adoption of this provision would do two things.

One, it would include the EEZ portion of the striped bass stock in the unified State management plan and clearly state that States are responsible for this management. Second, it would eliminate the need for a second fishery management plan by the regional management councils which we believe is simply added confusion and expense that need not be incurred in order to properly manage this coastal stock.

Lastly, we do support the continued appropriation of emergency striped bass study funding. It has been instrumental in what we have been able to do in the Chesapeake Bay in defining both the spawning stocks, the stocks that are resident in the Bay, and the continued analysis of the reproductive capacity of that stock.

In Maryland, we have utilized emergency striped bass funds, Wallop-Breaux funds, and State funds, and we believe we have a very comprehensive program that now exceeds $.5 million annually. In concert with other States from Maine to North Carolina, we anticipate a continued commitment to striped bass research and stock assessment, and we believe the continuation of Federal funding is an appropriate partnership of State and Federal capabilities to restore and manage striped bass.

Thank you, Mr. Chairman.

Senator MITCHELL. Thank you, Mr. Jensen.

The record will remain open for a brief period to permit members of the subcommittee who are not able to make it to the hearing today to submit additional questions, if they so choose, and I ask that the witnesses respond to the questions in writing at their earliest convenience.

We will now proceed to questioning by the members of the subcommittee. In accordance with the committee's rules, each round will be five minutes, and they will be called upon in order of their appearance here today.

So, we will begin with Senator Chafee.

Senator CHAFEE. Thank you, Mr. Chairman.

I want to say it is encouraging to hear what has taken place so far. I think we are all delighted that the stripers seem to be coming back. I know there are problem areas, as was mentioned by Mr. Alperin and Mr. Jensen and others with the Chesapeake Bay.

Mr. Alperin, I would like to ask you a question. I couldn't quite understand from your testimony whether you were for or against the continuation of the study.

Mr. ALPERIN. Oh, we are for it. We polled the 45 Commissioners to see how they felt about it, because there are some who are not so happy about having what they consider additional force from the Federal Government on States' rights.

Senator CHAFEE. I know that, but I am just asking about the study.

Mr. ALPERIN. We had 82 percent that voted for it without any question.

Senator CHAFEE. So, you support the continuation of the study.

Mr. ALPERIN. Oh, our commission supports it. We have to work by some kind of consensus, Senator.

Senator CHAFEE. Sure. Well, it is encouraging to see what has taken place.

What do you think of the ideas that Mr. Jensen put forth, first that the act should be amended to require the Secretary to impose the applicable management measures in State waters if the States are determined not to be in compliance with the commission?

Mr. ALPERIN. I would encourage that in the sense that we are trying to see that States comply, and it is difficult for us. I think a moratorium doesn't serve the purpose. We want the States to take on those actions that the commission recommends.

Senator CHAFEE. As I understand it, if the States don't comply, all the Secretary can now do is impose a moratorium?

Mr. ALPERIN. Yes, sir.

Senator CHAFEE. No fishing?

Mr. ALPERIN. No fishing.

Senator CHAFEE. No catch whatsoever. As a practical matter, at the present time, aren't we practically at a no catch situation right now?

Mr. ALPERIN. Very limited. The last report that I saw from the National Marine Fisheries Service was about 300,000 pounds in the commercial fishery, about one-third of that or more coming from North Carolina, a larger amount being caught in the recreational fishery, about 900,000 pounds, but about 90 percent of those fish are being returned because they are under size. They don't make the 33-inch size limit.

Senator CHAFEE. The current size is 33 inches?

Mr. ALPERIN. Yes; 33 inches.

Senator CHAFEE. Are you having trouble with those who impose nets along the shore that are inadvertently—or maybe not so inadvertently—picking up the stripers as they come along?

Mr. ALPERIN. There is always some difficulty in that, particularly in the spring shad fisheries, but they are monitored by our law enforcement people.

Senator CHAFEE. Any escape net that has a big enough hole for a 33-inch or 32.9-inch striper to get through is a pretty big hole, isn't it?

Mr. ALPERIN. Yes, it would be.

Senator CHAFEE. So, what can you catch?

Mr. ALPERIN. Well, I think it is a question of States adjusting the season so that net fishermen catch other species. Now, the striped bass that are moving into the upper bays at the same time the shad fishing is going on in the spring—there is a difficulty there, and it is up to the States to either close the season, change the season, or have the shad nets placed in places where striped bass do not frequent. It is very difficult.

The net fishermen in Delaware Bay, for example, have very few fish to fish for, but even in Delaware where there is a moratorium on striped bass, they are allowed to set these nets, and they do catch some striped bass which we hope they are releasing.

Senator CHAFEE. If one goes into a restaurant and sees rockfish on the menu, is that illegally caught or where would that come from?

Mr. ALPERIN. Not necessarily. The rockfish may have come from North Carolina.

I don't know if you are familiar with it, Senator, but there was a big sting operation in North Carolina where fishermen were taking striped bass from fresh water and selling them. They were given very severe fines, and I do not think that occurs any more.

But I don't think most of the markets that I am aware of are accepting rockfish unless they are over 33 inches.

Senator CHAFEE. Dr. Richards, are you upbeat about this whole process, saving the striper and restoring them once again?

Ms. RICHARDS. What do you mean am I upbeat about it? Do I think——

Senator CHAFEE. Well, are you optimistic? I looked at your charts, and some looked good and some not so good. Certainly, the Delaware Canal figures were discouraging. The Maryland side of the Chesapeake Bay wasn't very encouraging.

Ms. RICHARDS. All in all, I think that we have some good reason for optimism when we look at those, particularly the Virginia juvenile index. But I think it has to be very cautious optimism, because when we look at the spawning grounds samples, we don't see a broad distribution of age classes of females there. If we had that kind of broad representation of females, we would have a much more stable basis from which to have optimism about this.

So, this is why I say I think it is very important that restrictions on fishing continue so that we can rebuild that spawning stock. We will have a real good basis for optimism then, I believe.

Senator CHAFEE. Could I ask one more question quickly?

Senator MITCHELL. Certainly.

Senator CHAFEE. The Kennebec represents, at least to my knowledge, in modern times a new spawning area. Am I correct in that, and why did that come about? It seems to be fairly encouraging from some of the testimony we had here.

Ms. RICHARDS. Actually, I am afraid I am not terribly familiar with the situation in the Kennebec. I had thought that at one point there was a fishery for striped bass in the Kennebec. As to whether they ever spawned there, I am not at all sure.

I think it is very interesting that there is evidence that there may be spawning going on. It is perfectly possible that there had been in the past. For instance, there are spawning stocks in Canadian waters up in the Bay of Fundy and so forth. So, it is not impossible to think that it might have ever occurred.

Senator CHAFEE. Thank you, Mr. Chairman.

Senator MITCHELL. Thank you, Senator Chafee.

Senator Stafford.

Senator STAFFORD. Thank you, Mr. Chairman.

Let me start with a couple of observations. In seriousness, I have had a boat on the Chesapeake Bay for nearly 28 years now, and my wife and I have spent our recreational weekends on the Bay from April until December when we didn't have to go somewhere else, so I have watched the stripers virtually disappear from the bay as far as a casual recreational fisherman is concerned.

I am delighted to hear that they may be coming back, and I realize that contaminants in the Bay may have had something to do with it, but I think, as this evidence today seems to indicate, over fishing has been a major part of it, too. My observation would be, I think, that if there isn't some control over future fishing, even if we extend this act for 2 more years, we are liable to go right back where we were and see the stripers as a vanishing breed of fish.

I would just express the fear from observing the scene in the last few years that oysters might be headed in the same direction and that even crabs are coming under very heavy pressure today from fishing, even beyond whatever contaminants and soil runoff might do in those species.

Let me ask just a couple of questions, because I vaguely remember that, say, 10 years ago, we weren't supposed to keep a striper that weighed over 32 pounds or something like that. Is that true? That was for brood stock, wasn't it?

Ms. RICHARDS. There was a maximum—or there is a maximum size limit in the Bay. That is not true in all areas.

Senator STAFFORD. It never worried us, because we never caught one anywhere near that big, but I remember that was a regulation.

How large is a female striper when it is ready to start producing eggs, a brood stock striper?

Ms. RICHARDS. Well, the reason for the 33-inch size limit is that, based on earlier information on maturation, a female of that size would have spawned once, or 95 percent of the females of that size would have spawned once.

Senator STAFFORD. What is the lifespan of a striper?

Ms. RICHARDS. Well, that is a very good question. I am not sure that we actually know that, because they have been fished so heav-

ily that they don't get to express that lifespan, but it is a very long lived species.

Senator STAFFORD. Would you take a wild guess, 12 years, 10 years?

Ms. RICHARDS. Oh, no. I would say more like 30 at least.

Senator STAFFORD. For 30 years?

Ms. RICHARDS. And beyond that, yes.

Senator STAFFORD. Well, I think you have made a case. Unless the next witnesses change my mind, you have certainly made a case for two more years of this act as far as I am concerned. Thank you.

Thank you, Mr. Chairman.

Senator MITCHELL. Thank you, Senator Stafford.

Senator Mikulski.

Senator MIKULSKI. Thank you, Mr. Chairman. I appreciate having another coadvocate for the Chesapeake Bay.

My question really goes to the cause for species decline in the Bay and along our waters. The case for over fishing has been made, but there have been many reports recently about the impact of water quality, particularly acid rain, and we have heard that increased acidity from rain as well as nitrogen and nutrient problems are having a direct impact on species survival or species replenishment.

Could Mr. Jensen and other panelists respond how they see this actually being weighted? Is this as serious a problem as we have been reading about in the newspapers and other accounts?

Mr. JENSEN. Certainly, poor water quality has been implicated in many cases, but I think as pointed out earlier, it is not very conclusive yet that we have been able to put our finger on a smoking gun, so to speak, of a direct cause and effect relationship. Certainly, the signing of the new bay agreement by the three Governors and the District of Columbia is good news, because it is aimed at general overall water quality cleanup on behalf of the living resources of Chesapeake Bay.

So, I think we can be encouraged about that. We do have a number of specific studies going on acid rain, for example, the effect on yellow perch, the effect on striped bass, and we believe we are going to be able to answer very soon whether that is a strongly implicated factor in whether these fish can or cannot reproduce to their full capacity. We believe it is implicated; we just don't know how strongly it is implicated.

Certainly the reduction of nutrients in the bay has to be a high priority for all of us.

Senator MIKULSKI. Mr. Jensen, the Governor has made a very strong plea to all of us, one, to move on acid rain legislation which this committee supports, and then also on nitrogen removal, and there is a rather stern editorial in today's paper encouraging the congressional delegation to get on with this because of the species issue.

Mr. JENSEN. Absolutely. That is an essential thing for cleanup of the Bay.

Senator MIKULSKI. I mean, all the instructions coming into us are that it is fairly conclusive. Is it or isn't it?

Mr. JENSEN. It is conclusive in terms of lowering the water quality of the Bay. What I am talking about is tracing that to a direct cause and effect relationship to striped bass. That is still rather inconclusive, but in terms of overall species of the bay, the oysters, the crabs, the bluefish, the striped bass, absolutely. Lower water quality is strongly implicated in why we are not getting the reproduction that we should get in the bay.

Senator MIKULSKI. What about nitrogen and water quality?

Mr. JENSEN. Pardon?

Senator MIKULSKI. Well, you talked about acid rain. What about the nitrogen impact?

Mr. JENSEN. Nitrogen levels are much too high. They are contributing to many of the low DO problems and the over-nutrification of waters, particularly in the upper bay and in the rivers, and that simply is going to have to be reduced if we are going to expect our fisheries of the bay to recover.

Senator MIKULSKI. Do any of the other panelists wish to comment on that?

[No response.]

Senator MIKULSKI. In terms of resuming fishing, you talk in your report, Mr. Jensen, that you would rather have a fisheries management plan that will eventually reach a point to move beyond restoration. How would that work? As you know, watermen in our State would like to get back to fishing as soon as possible.

Mr. JENSEN. I think the way we see it working has been indicated in the recent discussions with what we are calling our striped bass white paper in the State. We have recently been able to develop a mathematical model where we believe we can accurately predict what the yield out of that fishery ought to be 2 years hence.

It is our full intention at this point, with the concurrence of the sport fishermen and the commercial fishermen that are on this committee to utilize that to cap the catch. In other words, we won't have an open-ended, unbridled fishery, and I believe if we can all adopt that attitude that there is a limit to what we can take out of the stocks based on the reproduction, then I believe we can avoid the boom and bust, and we can have a measured level fishery and not deplete these stocks in the future as we have in the past.

Senator MIKULSKI. What would be an example of that?

Mr. JENSEN. An example would be—well, I will give you a specific example. We predict, based on the status of the stocks right now, that in 1990, we could probably take 1 million pounds of fish out of Chesapeake Bay without harming the spawning stock, but if we took any more, we certainly would.

Therefore, if a fishery were to occur in 1990, we would have to limit it to 1 million pounds.

Senator MIKULSKI. Thank you, Mr. Chairman. I see the yellow light is on.

Senator MITCHELL. Thank you, Senator Mikulski.

Senator STAFFORD. Mr. Chairman, could I be allowed one more question?

Senator MITCHELL. Certainly, Mr. Chairman.

Senator STAFFORD. Could I ask the witnesses, along the Atlantic seaboard and within what we consider American waters for control of fisheries and so on, do we have a problem with boats from other

nations getting in and getting out with hauls of fish that might include stripers?

Mr. DOUGLAS. Senator, on average only about 5 percent of the catch of striped bass is in the EEZ, and that is in the nearer shore area of the EEZ. So, I think, on balance, I would not hesitate to say to you we do not have a foreign fishing catch problem on striped bass. That is not to say they don't ever take one, but——

Senator STAFFORD. OK, thank you. I remember a few years ago—I guess they were American fishing boats, but some large seiners got in the mouth of the Chesapeake Bay and made off, probably legally, with a large catch of blues with the result that virtually no blues got into the upper Chesapeake that year, and that upset the sport fishermen in that part of the Bay.

Mr. DOUGLAS. Yes, sir, it certainly did. I was heading the Virginia program when that occurred, and Mr. Jensen was up in Maryland. He and I have a long history of going back together on these things.

Senator STAFFORD. Thank you.

Senator MITCHELL. Thank you, Senator Stafford.

Senator Pressler.

Senator PRESSLER. Mr. Chairman, this is not a burning issue in South Dakota.

I am happy to be a part of it, because we do have environmental and other issues there for which I get a lot of help from you and the other committee members. So, I do not have any questions, but I am here to listen and learn.

Senator MITCHELL. Thank you very much, gentlemen and Dr. Richards. We appreciate it, and we will certainly give great weight to the testimony you have provided today.

Our next panel includes Mr. Norville Prosser, Vice President of the Sport Fishing Institute of Washington, DC; and Mr. Bob Pond, Executive Secretary of Stripers Unlimited, South Attleboro, MA.

Senator CHAFEE. Mr. Chairman, I would like to say a word about the Atlantic States Marine Fisheries Commission and the legislation that we passed.

It seemed to me that the legislation was rather unique in that it tried to place the responsibility on the States instead of big brother, the Federal Government, telling them what to do, and it proves that if we delegate downward the authority and responsibility, then there will be participation and a greater sense of responsibility, if I could repeat that word, without the Federal Government trying to do it.

I think that law was really a textbook example of how to get cooperative action from the States.

Senator MITCHELL. Thank you very much, Senator Chafee.

Gentlemen, welcome. We look forward to hearing your testimony. You were present during the testimony of the previous witnesses and so are aware of the committee's rules.

We will begin with you, Mr. Prosser.

STATEMENT OF NORVILLE PROSSER, VICE PRESIDENT, SPORT FISHING INSTITUTE

Mr. PROSSER. Thank you, Mr. Chairman.

I am Norville Prosser, Vice President of the Sport Fishing Institute. On behalf of the sport fishing industry membership of SFI, I want to thank the subcommittee for this opportunity to appear here today to present our views regarding S. 2384.

To date, as has been noted repeatedly this morning, the unique partnership forged by the Atlantic Striped Bass Conservation Act can only be characterized as a success story of truly remarkable proportions. The enabling third amendment to the ASMFC's striped bass plan, designed to prevent directed fishing mortality on the 1982 and subsequent year classes until 95 percent of the females spawn at least once, has resulted in a dramatic improvement in potential reproduction and recruitment to the fishery.

The U.S. sport fishing industry produced $28.2 billion in retail sales in 1985, according to the Department of the Interior, and provided approximately 750,000 jobs. This industry has made a significant investment in its future by supporting the Atlantic Striped Bass Conservation Act from its very conception.

The Atlantic coast recreational fishery for striped bass generated over $89 million in retail sales in 1979 which equates today to $140 million. These sales from nearly 2.2 million fishing trips on which 1.2 million striped bass were caught.

The 1986 recreational fishery caught only 13 percent of the 1979 catch, approximately 150,000 fish. The number of recreational trips and the retail sales in the sport fishing industry have, of course, declined commensurately.

Although members of the sport fishing industry are anxious for the striped bass sport fishery to reopen under proper stewardship, we believe that continued maintenance of this act is necessary to ensure that the investment that we have made thus far will be seen through to fruition. By allowing the stocks to rebuild, it is possible that, through sound conservation measures and management with the objective of maximizing social and economic benefits, the Atlantic coast striped bass fishery can become a true world class sport fishery.

For this dream to come true, the Atlantic Striped Bass Conservation Act must be reauthorized. We believe that by continuing the conservation measures used to date, it will be possible, in the not too distant future, to have a fishery that returns tremendous economic and social benefits to this Nation. We strongly support S. 2384.

The essential closure of the harvest fishery has been, if anything, easier on the management agencies than will be the reopening of the fishery under a management strategy designed to maximize societal benefits. The data acquisition and enforcement requirements of an open fishery will amplify monitoring demands far beyond those of a closed fishery. The demands of scientific monitoring to ensure sustained yields of social benefits will necessitate financial investments currently unavailable to most of the coastal fishery management agencies.

Some interest groups have proposed a Federal striped bass stamp to help provide the sustained dedicated funding that will be required to provide the necessary management. Although a user fee is deemed necessary and warranted for the purpose of striped bass management, licensing and permitting of anglers and hunters

within State borders, including waters of the territorial sea, has always been a most strongly guarded State prerogative.

We support a system of State fees in this regard. Mr. Chairman, it should be noted perhaps that the only State under the geographical borders regulated under this act—the only State in that area with a marine user fee is Maryland which has one for the Chesapeake Bay waters.

In that regard, we would support Congressional instruction to the affected coastal States to undertake an examination of the best strategy to implement a system of State user fees to provide the essential financial support necessary for striped bass management.

It has been suggested by some that the concept could be broadened to consider an interjurisdictional fisheries user fee, and we believe this concept appears to warrant close study as well.

In summary, Mr. Chairman, the Atlantic Striped Bass Conservation Act has well served the sport fishing fraternity. Without the act, the potential for an attractive recreational fishery with significant social and economic yields to the Nation would not be on the horizon.

Reauthorization and funding authority for the act and the emergency striped bass study are imperative.

Mr. Chairman, that concludes my remarks. I would be pleased to answer any questions.

Senator MITCHELL. Thank you, Mr. Prosser.

Mr. Pond, welcome. We look forward to hearing from you.

STATEMENT OF ROBERT POND, EXECUTIVE SECRETARY, STRIPERS UNLIMITED, SOUTH ATTLEBORO, MA

Mr. POND. Thank you, Mr. Chairman.

I am a manufacturer of fishing lures. I am also Executive Director of Stripers Unlimited. For the last 40 years or more, I have contributed 10 percent of my gross to the Federal Government under the DJ program. No industry spends more money to watch over its resource than does the tackle industry.

My training is in forestry. At Syracuse University we were taught to respect the resource and I have been watching and photographing striped bass since the 1970's. I supported Senator Chafee when he produced the Emergency Striped Bass Bill. We testified for it. The bill mandated that eggs and larvae be studied. We have not yet had anybody really look at them.

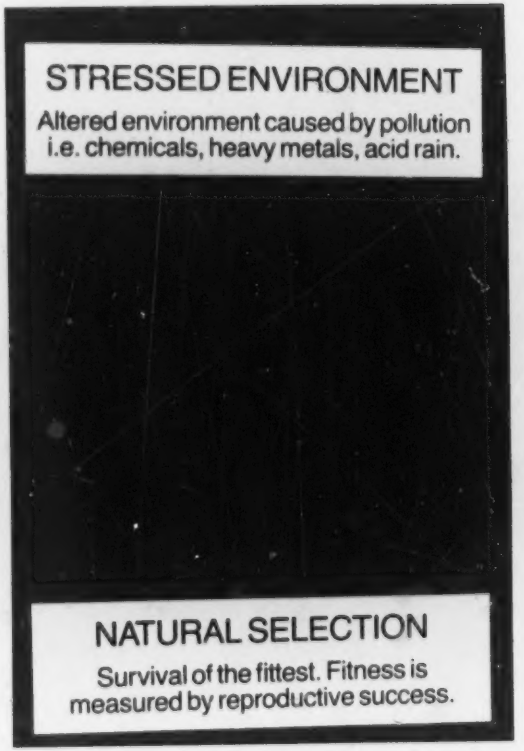
We don't think people really have defined the problem. I spoke to Dr. Turner at Boston University. He had written a chapter in a book entitled, Fish Physiology, about early embryo development. I told him about the problem with the eggs and showed him all the pictures. He said, "Let me tell you what you have just said to me." You know you have trouble somewhere, but you don't know precisely what it is."

I said, "Yes, that is about right." He said, "You have to define your problem." I then talked to Dr. Arlene Longwell and George Williams, a geneticists and an evolutionary biologist. George Williams has written a book-Adaptation and Natural Selection. I began to get some understanding of what was really happening.

We were dealing with a term called "adaptation." So, our testimony basically is about adaptation and its long-term effects and these pictures of the eggs which I love to show to everybody, because this really denotes the key to the problem.

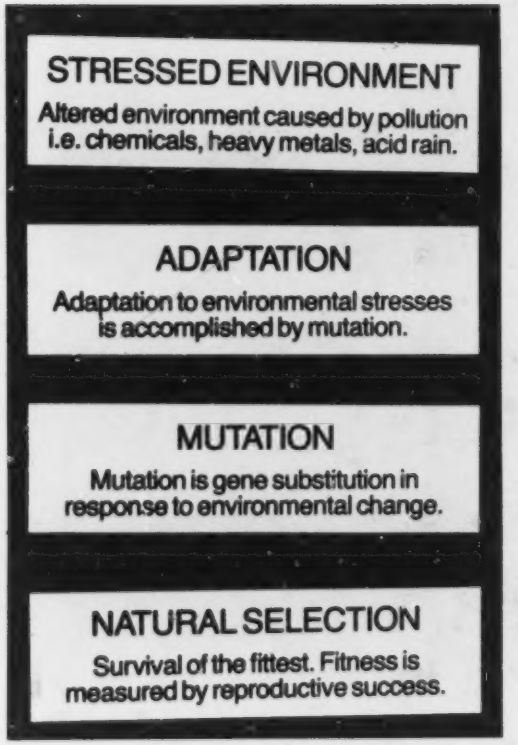
[The pictures referred to follow:]

Plate #1

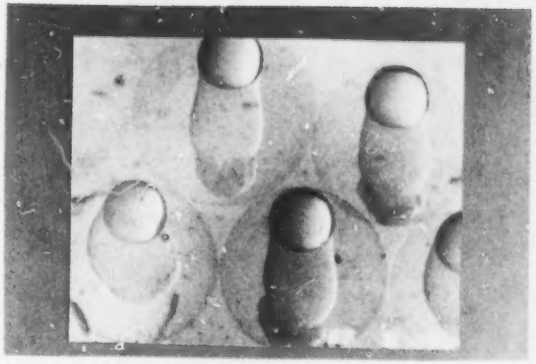

STRESSED ENVIRONMENT
Altered environment caused by pollution i.e. chemicals, heavy metals, acid rain.
NATURAL SELECTION
Survival of the fittest. Fitness is measured by reproductive success.

Darwinian theory.

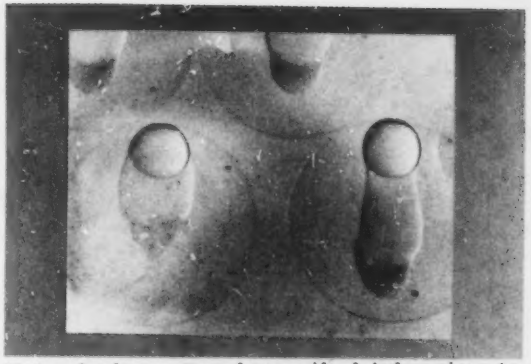
Plate #2


STRESSED ENVIRONMENT
Altered environment caused by pollution i.e. chemicals, heavy metals, acid rain.
ADAPTATION
Adaptation to environmental stresses is accomplished by mutation.
MUTATION
Mutation is gene substitution in response to environmental change.
NATURAL SELECTION
Survival of the fittest. Fitness is measured by reproductive success.

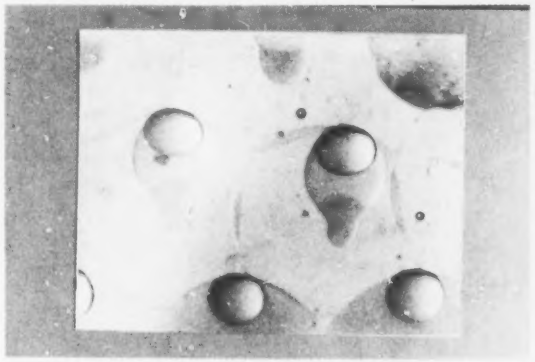
From Adaptation and Natural Selection by George Williams.



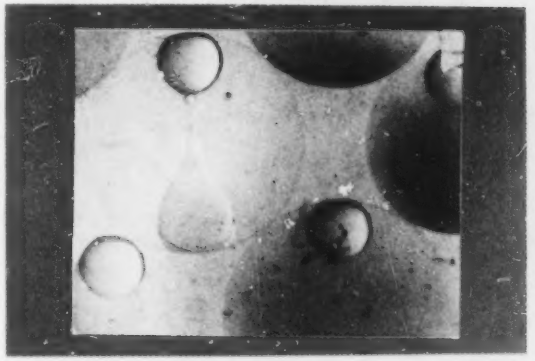
1) Maryland egg: Very large oil globule, rises to top of chorion. (Small chorion due to natural saltwater spawn) Abnormal pendant shape as membrane stretches from weight of cell development. Very uneven early cell development.



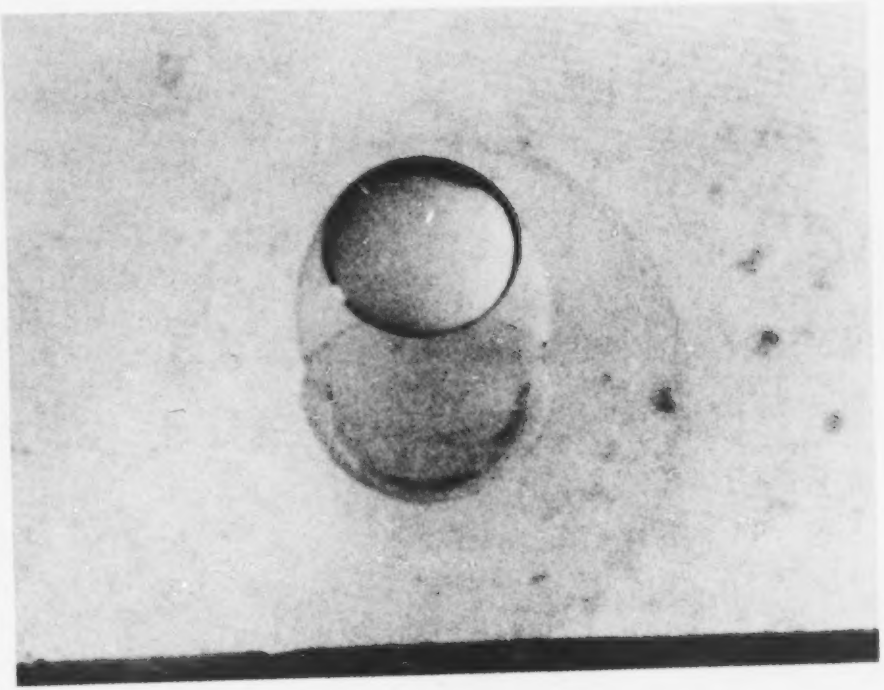
1) Maryland egg: Very large oil globule, rises to top of chorion. (Small chorion due to natural saltwater spawn) Abnormal pendant shape as membrane stretches from weight of cell development. Very uneven early cell development.



2) Maryland egg: Merula to gastrula stage (at top). Abnormal beehive shaped blastula stage (middle) will not survive, major cause of 12-24 hour die-off. Very large chorion (normal in Maryland's unique floating egg).

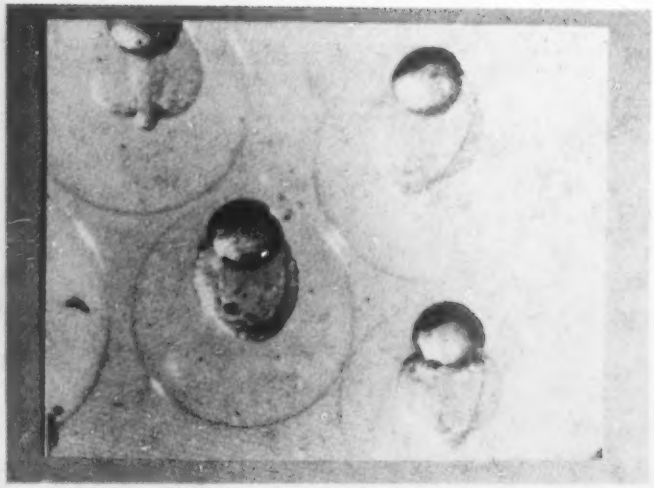


3) Maryland egg: Stretching and tearing of weak membranes. Heavy die-off.

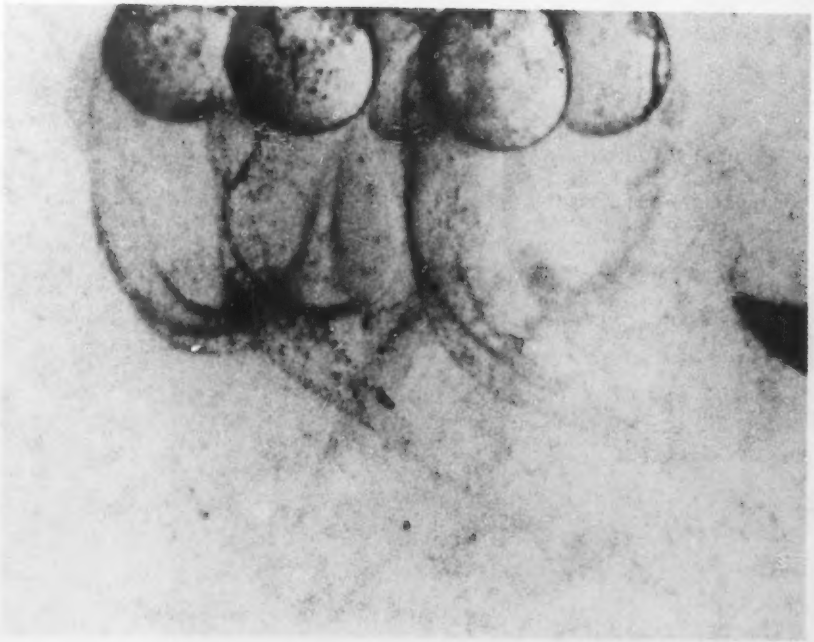


4) Maryland egg: Gastrula stage, apparently normal development, but had gross chromosomal damage.

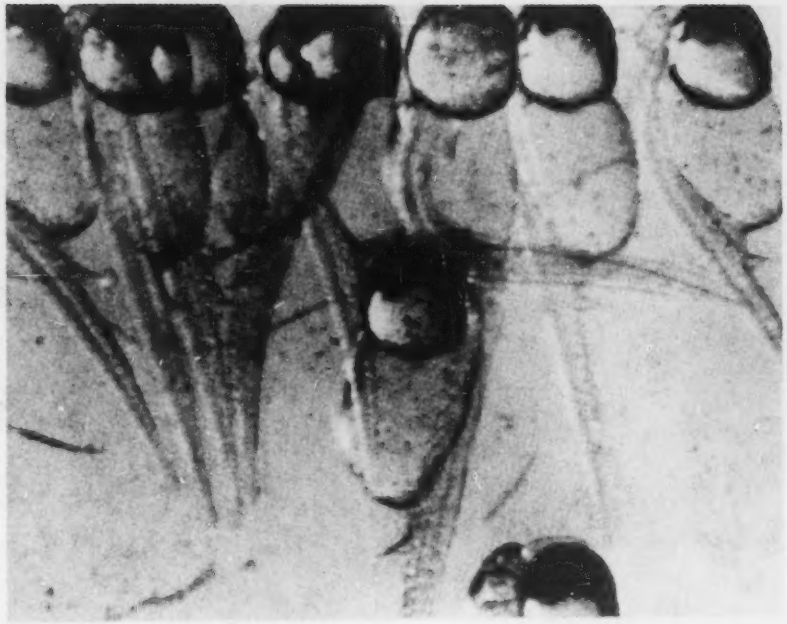
4a) Maryland egg: Bridged chromosome from egg in picture #4.



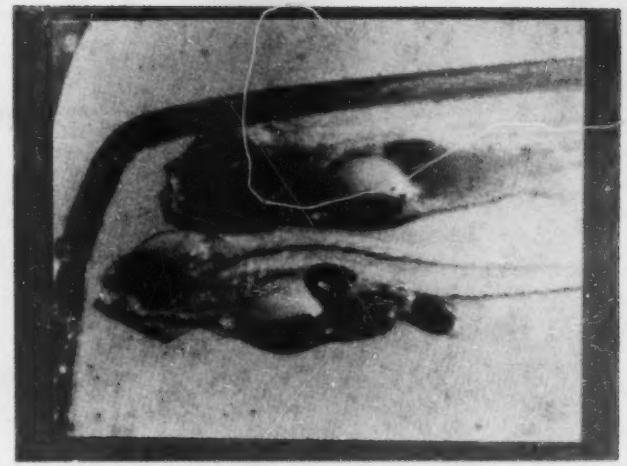
5) Maryland egg" Embryo stage. Bone structure not well defined.



6) Maryland larvae: Early chorion rupture. Larvae immobile and at mercy of hostile environment.Die-off heavy.



7) Maryland larvae: Just hatched larvae. Note that large oil globule causes them to rise to the surface.



8) 10-14 day old Maryland larvae . Note persistent oil globule. One has inflated swim bladder and one has none. 70-85% do not inflate their swim bladders. Major cause of loss in hatchery ponds.

Mr. POND. The trouble is something has gone wrong, and we don't know exactly where, but adaptation had been about ruled out. Our original thinking has been, since we were brought up on Darwinian theory, that natural selection runs the whole biological system and that all nature does, if you have a stressed environment, is trigger natural selection which will straighten out any mess that has occurred by choosing from the stock that is already present, taking the best and the strongest and removing the weakest.

Of course, natural selection is survival of the fittest due to reproductive success. In other words, if you have reproductive success, you are going to be more fit to survive and you are going to do well.

The problem is a stressed environment, requires no change. It doesn't require the organism to genetically protect itself against what has been done to the environment.

What normally happens is adaptation takes over. Now, adaptation to a stressed environment is accomplished by mutation which is a very, very disruptive process. Most people don't want to think in terms of mutations, because 95 percent of mutations are extremely harmful.

Mutations are gene substitutions to protect the parent. Therefore, what we are seeing, really, is the side effects of adaptation. We are seeing adaptation occurring, protecting the parent, and, in turn, it has produced all these side effects of poor egg production among other things.

So, what we are seeing now in the eggs of Chesapeake Bay is something that was observed back in the 1950's by Romeo Mansuetti. He saw the same things we are seeing today in the hatchery.

Also, in the 1950's Edgar Hollis noticed his plankton tows contained up to 80 percent dead eggs. So, the problem is not a current problem. It is not a problem that is caused by present conditions. It is a problem that occurred many years ago between 1945 and 1955. But it was in response to a change in the environment, the DDT, the PCB's, and other contaminants.

Right now the trouble is that these fish have adapted. They have changed their genetics to accomplish this adaptation. Therefore, they are surviving.

Now, one thing about the striped bass, when we first saw the eggs in the 1970's, they were stretching and tearing and falling apart. Now, here I am making lures for striped bass, and we see all these eggs falling apart and stretching and tearing and breaking up. They were terrible they had weird cell development.

Yet, in 1970, we had a dominant year hatch. How could this happen when the chemicals in the eggs were so high? EPA looked at these eggs later on mainly because of an article we wrote about striped bass, the modern dinosaur, disappearing. EPA looked at the striped bass eggs and came to the conclusion that the amount of the chemicals in the egg were too high. They were much too contaminated to survive. That amount of contaminants in the oil would have killed the striped bass if they had used the oil, but the striped bass had adapted to keep themselves from using the oil. They had changed their gene structure—from the old days, when

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they used to use yolk and oil more or less simultaneously as they developed. Now they don't absorb the oil any more.

That was what saved their lives. So, even though the eggs were terrible, in 1970, we have a dominant year hatch due to the protective mechanism which they had evolved to protect themselves against the chemicals which were present.

What we are seeing today, is exactly the same thing as Romeo Mansuetti saw back in the 1950's, and we see it in every female's eggs although they are a little bit better on the western shore of the Bay. Western shore striped bass which have a heavier egg are better than those of the Eastern Shore which had this floating egg.

This fish with the unique floating egg is virtually extinct now. The fish that produce this egg hardly exist any more. There are a few in the C&D Canal, but that is about the only place.

However, the probem is not a current problem.

Now, how do you deal with this? You have the opportunity of using other disciplines, geneticists, and evolutionary biologists, they can trace back these changes in time looking even at preserved samples and find out when this happened—not really exactly what happened but when it happened—and give you a history of what caused all this trouble.

But if you don't use these people, you are not going to find out what is going on.

Senator MITCHELL. Thank you very much, Mr. Pond. That is truly informative.

Senator Chafee.

Senator CHAFEE. Thank you very much, Mr. Chairman.

First, I want to thank Mr. Prosser and the Sport Fishing Institute for the position they have taken. That is very helpful. I think that certainly is the absence of selfishness. You people have truly been altruistic in believing that if sport fishermen are going to have fish to catch, then we have to take some stern conservation measures here.

And I think you are right that it is probably going to be more difficult when we go to what Mr. Jensen was suggesting, a limited catch, in how we are going to monitor that. It is probably easier to have no catch and monitor no catching than it is a limited catch.

I was also interested in your thoughts about the salt water sport fishing license which you said your institute supports States imposing it but you are opposed to the Federal Government imposing such a license fee. Is that a correct summary?

Mr. PROSSER. That is correct, yes, sir.

Senator CHAFEE. Mr. Pond, we appreciate all you have done. You have been active in this for so many years. You and I have had many meetings, and you have testified here before when we first got started on the study in 1979. We appreciate receiving your testimony.

What, specifically, do you suggest we do now?

Mr. POND. Well, the evolutionary biologist can trace back through time even to the beginning of the human race, because the female carries genetic code in the mitochondria DNA that tells you when mutations took place. They can go into mummies and look at a mummy and find the traces of this mitochondria DNA and tell where that female came from. So, they have the skills.

What you have to determine is, really, is it adaptation that is occurring? Well, the evolutionary biologist can find this out. He can go back through the preserved striped bass way back before we started using DDT or PCB's or anything else and at least say, OK, there is a change here. At a certain time and certain date or certain time, we see a change.

Now, all we can do is look at sketches that people made back in the old days that showed us how a striped bass developed how it looked, and how it used yolk and oil together. We don't see the things that they were seeing. In fact, I——

Senator CHAFEE. Suppose we do all that. Then what do we have?

Mr. POND. OK. Now, once you know you have this sort of a problem, you begin to realize that there are certain chemicals in the environment that absolutely cannot be there at all and never should have been there in the first place. Now, you know this is affecting everything, including ourselves, and we have to get to work on removing the chemicals which cause adaptation. Whatever harmful chemicals are present must be removed from the environment just as quickly as possible. We need to find undamaged striped bass populations and create a sanctuary for them in a clean area.

Senator CHAFEE. Well, that is a challenge for us. So, obviously, you would want the study continued.

Mr. POND. Oh, absolutely.

Senator CHAFEE [presiding]. Senator Stafford.

Senator STAFFORD. Thank you, Mr. Chairman.

As I mentioned earlier, my family and I have enjoyed the Chesapeake Bay for a number of years. I do note that their requirement for a license to fish on Chesapeake Bay is quite a recent one. It seems to me it is only two or three years old.

For this Senator, it has an attractive feature, and that is if you are over 70, you don't have to get one.

Mr. Pond, I say this facetiously, but I should ask you to submit for the record a small list of your most successful lures.

Mr. POND. Okay. Well, we have gone to a one-hook lure so fish can be released very easily. We have changed our product over so we don't have all those treble hooks on them.

Senator STAFFORD. I must say I agree with what both of you have said. The overall problem of contaminants and their impact on fish stock, in my lay opinion, combined with over-fishing, is the problem.

As I said earlier, I think the oyster fishing in Chesapeake Bay is facing the same fate. I know that last fall, the season, I think, was delayed several weeks and then terminated several weeks in advance of the legal requirement to shut it down because of the shortage of stocks to be reaped in the oyster fields, and I suspect that crabs are liable to suffer the same fate unless there is restraint in fishing.

I know that there is a large fish handling facility in Galesville in Maryland where we keep our boat, and they are no longer really selling oysters even to casual buyers at the fish processing plant. What they are getting I guess they are selling to restaurants in the large cities. You can't go in there now on a weekend and buy a pint of oysters even in season. They just aren't available.

So, we have a lot of problems. I am glad you both agree we should extend this act. It seems to be almost unanimous among the witnesses with one exception that we should do so. I am convinced of its necessity, and I am prepared to vote to do so.

Thank you.

Senator MITCHELL. Thank you very much, Senator Stafford.

Senator Chafee, do you have any concluding remarks you would like to make?

Senator CHAFEE. No, Mr. Chairman.

What would be your intention? At some future time we would move this from the subcommittee?

Senator MITCHELL. Yes.

I think the overwhelming weight of testimony we have received here today and other indications are that this has been a valuable program. Really, you deserve to be commended for that. And we ought to do more.

I think some of the suggestions made today for improvements in the act ought to be seriously considered by the committee, but it is my hope to move it as soon as possible. I think it is clear that while there are some encouraging signs, as you put it in your question to Dr. Richards, there are also others that are not, and it is obvious that there hasn't been full success yet and that there is going to be a long way still to go and more information to be gained.

So, we really do appreciate the testimony that you gentlemen provided and that of the previous witnesses and the slide presentation. We look forward to working with all of you in the near future to continue this valuable program.

Thank you very much.

With that, the hearing is concluded.

[Whereupon, at 11:21 a.m., the subcommittee adjourned, to reconvene subject to the call of the Chair.]

[Statements submitted for the record and the bill S. 2384 follow:]

STATEMENT OF GARY EDWARDS, ASSISTANT DIRECTOR FOR FISHERIES, U.S. FISH AND WILDLIFE SERVICE, DEPARTMENT OF THE INTERIOR, BEFORE THE SENATE COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS, SUBCOMMITTEE ON ENVIRONMENTAL PROTECTION, CONCERNING S. 2384, A BILL TO EXTEND THE AUTHORIZATION OF THE ATLANTIC STRIPED BASS CONSERVATION ACT AND THE AUTHORIZATION OF APPROPRIATIONS FOR THE STRIPED BASS STUDY ACT.

MAY 25, 1988

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Mr. Chairman, I am pleased to appear before you today to discuss reauthorization of two statutes--the Atlantic Striped Bass Conservation Act and the Striped Bass Study Act. Both statutes have been central to cooperative efforts with 12 Northeastern and Mid-Atlantic States, the District of Columbia, and the Potomac River Fisheries Commission to restore Atlantic coastal migratory stocks of striped bass. These cooperative efforts have reversed the decline of these important fisheries resources and have provided the foundation for their successful restoration.

We recommend reauthorization of the Conservation Act for 2 years, but believe extension of the funding authorization for the Study Act is unnecessary. With the stock size increasing, we believe the States should assume this study responsibility. To the extent that Federal studies are required, they may be completed under other authorities.

Although focusing on the same stocks of striped bass, these statutes deal with different issues and Service activities. Hence, I will address each Act individually.

Atlantic Striped Bass Conservation Act

The Atlantic Striped Bass Conservation Act, originally enacted in 1984 and extended in 1986, was the response to a consensus reached among fishery

scientists and agencies in 1983 that overharvest was a principal cause for the rapid decline of Atlantic coast striped bass stocks beginning in the 1970s. That conclusion was based primarily on research conducted under the 1979 Study Act.

The Conservation Act involves a unique approach for the cooperative management of interjurisdictional fishery resources. Consistent with accepted principles of federalism in fisheries management and with limited Federal involvement, the Conservation Act facilitates fulfillment by the 14 management jurisdictions of their acknowledged fishery resource stewardship responsibilities. Recognizing that these jurisdictions are subject to disparate and pervasive pressures to maximize fisheries in their waters, the Conservation Act provides an essential incentive for them to place the long-term viability of these stocks ahead of local, short-term interests. This is accomplished by requiring the Secretaries of Commerce and the Interior to impose a moratorium on striped bass fishing in any jurisdiction if they determine, after notice from the Atlantic States Marine Fisheries Commission, that such jurisdictions are not in compliance with a fishery management plan developed and approved by the Atlantic States Commission.

The Conservation Act represents an unqualified success story. Full implementation of the Atlantic States Commission's amended plan is largely attributable to the consensus and cooperative spirit engendered by the Conservation Act. Implementation of the Conservation Act has been effective in halting and beginning to reverse the decline of Atlantic migratory striped bass stocks. The Conservation Act has provided the Atlantic States Commission with the support needed to broaden the scope of existing management of Atlantic coast striped bass, including general compliance with the existing interstate striped bass management plan by the 14 jurisdictions involved.

The law, designed to ensure that the Atlantic States Commission's striped bass management plan is implemented, will expire after September 30, 1988. Without this authority, the substantial progress since 1984 in reversing the decline of Atlantic coastal striped bass stocks may be lost. To avoid this outcome, the Administration recommends a 2-year extension and reauthorization of the Act.

A 2-year period would provide the time necessary to allow completion of the Atlantic States Commission's new fishery management plan, as well as ensuring that the plan is thoroughly reviewed before being approved and implemented. This period would also facilitate an orderly and effective transition to the new cooperative fishery management regime to be developed by the Atlantic States Commission.

Because of potential Constitutional problems, and as a practical matter, the new plan should be final before it is incorporated into the Conservation Act by the Congress. However, the new plan is still under development and may not be completed and approved by the Atlantic States Commission prior to expiration of the Conservation Act. In particular, there may be insufficient time to reach a consensus among the States concerning the basis for allocating allowable harvests between commercial and recreational fisheries and among the 14 jurisdictions involved. This consensus is important in establishing the new plan as the technical basis for subsequent application of the Conservation Act.

Striped Bass Study Act

The appropriations authority for the Striped Bass Study Act, originally enacted in 1979, will expire at the end of Fiscal Year 1988. The Administration does not support reauthorization for the reasons mentioned previously.

After 8 years of concentrated research, it is now clear that the decline of

Atlantic coastal migratory stocks of striped bass is a more complex and difficult problem than originally perceived. However, substantial new information and insight about these stocks have been gained from the cooperative studies conducted under authority of the Study Act.

One major conclusion initially reached in late 1983 was that there had been a failure of reproduction of these stocks due, in part, to reduced population levels. Although other factors were recognized as possibly contributing to the decline, it was concluded that the decline could be addressed most quickly by substantially reducing striped bass fishing mortality. The 1983 annual report recommended such action, and as a direct result, the Atlantic States Commission amended its 1981 plan to require an additional 55-percent reduction in fishing mortality. Based on further analysis of that evidence, the Atlantic States Commission also amended its plan a third time in 1985 to ensure very limited fishing mortality on the 1982 and subsequent year classes until 95 percent of the females had spawned at least once.

The conclusions and recommendations of the 1983 annual report were also instrumental in the enactment and subsequent reauthorization of the Conservation Act. Another result is growing optimism that substantial striped bass fishing opportunities will once again be available throughout this coastal region.

If harvest restrictions can be maintained for several more years, a substantial increase in spawning may be realized from the large striped bass broodstock that now exists due to the sacrifices of fishermen from Maine to North Carolina. This increased spawning potential provides the opportunity to determine whether the population decline was due to overharvest or to reproductive failure caused by some alternative factor, principally high levels of contaminants in spawning areas.

Mr. Chairman, this concludes my prepared testimony. I would be pleased to respond to any questions you or other members of the Subcommittee may have.

TESTIMONY OF
JAMES E. DOUGLAS, JR.
DEPUTY ASSISTANT ADMINISTRATOR FOR FISHERIES
NATIONAL MARINE FISHERIES SERVICE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
U.S. DEPARTMENT OF COMMERCE

BEFORE THE

SUBCOMMITTEE ON ENVIRONMENTAL PROTECTION
COMMITTEE ON ENVIRONMENTAL PUBLIC WORKS

UNITED STATES SENATE

MAY 25, 1988

Mr. Chairman and Members of the Subcommittee:

My name is James E. Douglas, Jr., and I am the Deputy Assistant Administrator for Fisheries of the Department of Commerce's National Oceanic and Atmospheric Administration.

I am pleased to present the views of the Department of Commerce on S. 2384, a bill to reauthorize the Atlantic Striped Bass Conservation Act and for other purposes.

The Atlantic Striped Bass Conservation Act, which is due to expire on September 30, 1988, authorizes the Secretaries of the Interior and Commerce to impose a moratorium on fishing for striped bass in any State from Maine through North Carolina if it has not adopted, or was inadequately enforcing, conservation measures contained in the Atlantic States Marine Fisheries Commission's (ASMFC) Interstate Fisheries Management Plan for the Striped Bass and all amendments thereto related to fishing.

S. 2384 would reauthorize the Atlantic Striped Bass Conservation Act through fiscal year 1991. The bill also would reauthorize section 7 of the Anadromous Fish Conservation Act, to provide funding through fiscal year 1991 for the Emergency Striped Bass Study.

Since its passage in 1984, the Atlantic Striped Bass Conservation Act has provided the necessary impetus and encouragement to the States to implement the management provisions of the Interstate Fisheries Management Plan for Striped Bass. It identified the ASMFC as the organization to determine State compliance with the Plan and to monitor and assess the enforcement activities of the States in implementing its management provisions.

The ASMFC notified us in July 1985 that the States were in full compliance with the Plan. However, in December 1986, ASMFC reported that New Jersey and the District of Columbia were not in compliance, because they did not have management measures in place deemed adequate to implement the provisions of the Plan.

In cooperation with the U.S. Fish and Wildlife Service, we immediately initiated steps necessary to impose a moratorium on the striped bass fishing in the waters of New Jersey and the District of Columbia. These two jurisdictions were given until April 2, 1987, to implement management measures which would bring them into compliance, or a moratorium would be imposed. In late March 1987, additional striped bass regulations adopted by New Jersey and the District of Columbia were determined by ASMFC to be in compliance

with the Plan. Thus, both jurisdictions averted the imposition of a moratorium and the effectiveness of the Act was demonstrated. In January 1988, the ASMFC reported that all States, the Potomac River Fisheries Commission, and the District of Columbia were in full compliance with the Plan.

Evidence indicates that excessively high fishing mortality was one of the major causes of the decline of the striped bass population in the late 1970's. Adoption by the States of the suggested 33-inch minimum size limit as a means of meeting the requirements of Amendment 3 to the Striped Bass Plan, and other restrictions such as the Maryland moratorium, appear to have brought about a significant decrease in fishing mortality and an evident increase in stock size. We believe the Act was responsible, in large part, for these occurrences. We also believe that reauthorization of the Act is necessary to allow for continued recovery of the striped bass stocks, particularly the Chesapeake stock in Maryland waters.

We do not favor any additional Federal Government role in the management of striped bass beyond that specified in the Act. We believe the States, through the ASMFC, should be responsible for managing striped bass, including approving and implementing the management plans and amendments. In response to the evident increase in stock size, the ASMFC is developing a new management plan.

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The Emergency Striped Bass Study funds were used by the National Marine Fisheries Service (NMFS) primarily for projects to determine the status of the stocks of striped bass. These projects included studies of fishing mortality, stock identification, monitoring young-of-the-year production, and characterizing age, size, and sex composition of the commercial landings. Recently, we began funding an adult stock monitoring program and a coastwide tagging program.

Most projects funded by NMFS were carried out by State fisheries agencies under a grant-in-aid-program. We have coordinated our projects with those of the U.S. Fish and Wildlife Service.

We do not support reauthorization of Section 4, which would extend Section 7 of the Anadromous Fish Conservation Act. We believe the purpose of the emergency study has been accomplished with the documentation of the problems and contributing factors which led to the decline of striped bass. The research needed to support State management efforts should be funded by the States, and not by the Federal Government. However, we will continue to work with the States to complement their efforts wherever practicable.

This concludes my prepared statement, Mr. Chairman. I would be pleased to answer any questions you or any Member of your Subcommittee might have.

EMERGENCY STRIPED BASS RESEARCH STUDY

Report for 1986

U.S. Fish and Wildlife Service
Department of the Interior

National Marine Fisheries Service
Department of Commerce

Prepared by

Paul J. Rago
U.S. Fish and Wildlife Service

R. Anne Richards
David G. Deuel
National Marine Fisheries Service

EXECUTIVE SUMMARY

Unprecedented declines in striped bass harvests coupled with poor juvenile production during the 1970s led to legislation which authorized comprehensive studies on Atlantic Coast striped bass populations (The Emergency Striped Bass Research Study [ESBS]). The purpose of this report is to summarize the results of those and related investigations to date. This report focuses on (1) the status of striped bass juvenile and adult stocks, (2) research conducted to identify causes of the decline, and (3) management measures that have been implemented to rebuild the stocks. Since the program began in 1980, much has been learned not only about striped bass biology, but also its management. Information gathered by the U.S. Fish and Wildlife Service, the National Marine Fisheries Service and the States, through the ESBS, has laid a solid basis for the restoration of striped bass. Restoration, however, will be a slow process, given the depressed state of the stock and the relatively high age at first spawning.

Harvest of anadromous stocks of striped bass on the Atlantic Coast declined precipitously during the late 1970s and early 1980s. Reductions in harvest levels can be attributed principally to a decline in production of juveniles by the Chesapeake Bay populations. Present low levels of harvest are due in part to increasingly restrictive management measures designed to preserve the remaining adult stocks and to ensure the maturation of pre-reproductive fish.

Declines in juvenile production could have resulted from (1) long term increases in fishing mortality which reduced the average lifetime egg production per female, or (2) long-term decreases in the survival rate from egg to juvenile life stages, or (3) a combination of (1) and (2). Increased demand for striped bass in response to the high abundance of the early 1970s along with degradation of spawning and nursery habitats are thought to be underlying causes of the decline.

Juvenile production has remained extremely low during the early to mid-1980s. Production indices have little potential to increase until the year-classes protected by management (1982 and on) are old enough to spawn. Females of the 1982 year-class are not expected to appear on the spawning grounds in large numbers until 1987, when the majority will be mature.

Analyses of the effects of fishing on the stock have demonstrated that striped bass have historically been subjected to growth overfishing, a condition in which the stocks are harvested before achieving their maximum potential for growth. Furthermore, the stock was fished at a level which reduced the average number of recruits per year (recruitment overfishing) during the years prior to recent management actions. Expansion of adult tagging and fishery-independent sampling in 1987 will provide further insights on the effects of exploitation on the stocks.

Three years of in-situ and on-site toxicity tests have identified water quality problems in some rivers in some years. Striped bass eggs and larvae

are extremely sensitive to pH levels below 7.0. Some rivers experience episodic depressions in pH with major rainfall events. Such events, coupled with high ambient levels of aluminum and other inorganic toxicants can result in highly toxic conditions. The ultimate effect of such conditions on year-class strength depends on the spatial and temporal extent of the toxic conditions and their overlap with the period of spawning and larval development.

Analyses of historical data on pH levels in major striped bass spawning areas along the Atlantic Coast revealed no systematic difference in either the frequency or magnitude of low pH events before and after 1970. However, simulations indicated that the historical monitoring programs would only have been capable of detecting major changes in the frequency or magnitude of such events.

Other factors which have been investigated such as predation, competition, lack of appropriate food sources, disease and organic pollution have not been implicated in the decline of striped bass. A factor still open to debate is the role of the Chesapeake and Delaware Canal. Measurements indicate a net flow from Chesapeake Bay to Delaware Bay, thus eggs and larvae may be transported into the Canal from within the Elk River complex.

Our ability to distinguish between the "fishing mortality" versus the "habitat degradation" hypotheses for the decline will depend on the response of the populations in the next few years. Regardless of changes in water quality, it is clear that the level of fishing mortality during the population's decline (early to late 1970s), was far too high for the population to sustain. Current reports of large numbers of the protected 1982 year-class fish provide evidence of previously excessive fishing pressure, since the juvenile index for this year-class was only about the historical average. If the present cohort of pre-reproductive fish fails to produce a strong year-class in the next few years, this will provide support for the water quality hypothesis, particularly if water quality conditions are adverse. It is clear, however, that this hypothesis cannot be tested without an adequate spawning stock. In any event, the historical variability in early life stage survival suggests that several years of monitoring will be required. Such information will also measure the effectiveness of current management measures and aid effective management in the future as the stock recovers.

The U.S. Fish and Wildlife Service, in cooperation with Maryland and Virginia, began to stock fingerling striped bass in Chesapeake Bay in 1985. To date, over 700,000 hatchery-reared striped bass have been stocked. Most of these fish have been tagged with coded wire tags and some have also been marked with internal anchor tags. The tags will provide information on the movements and mortality of hatchery striped bass and will provide a means of measuring their contribution to the natural stocks. This stocking program will be terminated when natural production increases to historical levels.

Management measures imposed by the states on the striped bass fisheries are intended to severely reduce fishing mortality, particularly on the 1982 and subsequent year-classes of the Chesapeake stock. Nearly total protection of these year-classes has been accomplished over the past few years by

incrementally increasing minimum-size limits to 33 inches by August 1987. This protection has apparently resulted in excellent survival and consequent high abundance of these year-classes. Recovery of the stock is dependent on successful reproduction by these year-classes and on adequate survival of their progeny.

The Atlantic Striped Bass Conservation Act was passed by Congress to support and encourage the development, implementation and enforcement of effective interstate action regarding the conservation of striped bass. The Act has been effective in encouraging the States to implement, in a timely manner, regulatory measures to comply with Amendment 3 of the Interstate Fisheries Management Plan for the Striped Bass. Many of the management actions have been guided by research conducted under the ESBS. Conversely, management needs have provided direction for selected research activities.

Statement of

IRWIN M. ALPERIN, EXECUTIVE DIRECTOR,
ATLANTIC STATES MARINE FISHERIES COMMISSION

on

S. 2384, to reauthorize the Atlantic Striped Bass Conservation Act

before the

Subcommittee on Environmental Protection
Committee on Environment and Public Works
U.S. Senate

May 25, 1988

Mr. Chairman and members of the Subcommittee, I am Irwin Alperin, Executive Director of the Atlantic States Marine Fisheries Commission. I appreciate the opportunity to appear before your Subcommittee today on behalf of the Commission's member states, particularly the 12 states participating in ASMFC'S Striped Bass Fishery Management Program. I am here to relay the Commission's views on S. 2384 which would reauthorize the Atlantic Striped Bass Conservation Act for three years, through September 1991.

The Atlantic Coast states have been managing striped bass under the auspices of the ASMFC Interstate Fisheries Management Program since 1981. Three amendments to the striped bass plan were applied in quick succession to curb the fishery when it was determined that Atlantic migratory striped bass stocks continued to decline after initial plan measures were approved. We believe that the current restrictions are responsible for the universally observed rebounding of the striped bass stock. In particular, protection of the females of the 1982, and subsequent, year classes has been very important to our efforts. To achieve this protection, all fishing effort along the Atlantic Coast was severely curtailed. A number

of states went further than Amendment 3 required and imposed moratoria on striped bass harvest in their states. Moratoria are still in place in Maryland and Delaware, and New York has a partial moratorium with its human health (PCB) closure. Minimal commercial landings, low possession limits on recreational fishermen, and seasonal closures are all working to allow the Chesapeake Bay striped bass stock to continue it's recovery. In addition to controlling fishing effort, the enforcement of striped bass regulations along the coast has been very good. The most recent ASMFC Law Enforcement Committee Striped Bass reports (copies attached) state that law enforcement agencies continue to place a high priority on striped bass protection and, further, that the courts are treating violations of striped bass regulations seriously. These reports also note the encouraging news that there is good public acceptance of striped bass regulations.

A key component of our current striped bass management is monitoring striped bass populations. In the past few years, we have seen increased abundance of juvenile fish in the Hudson River, Virginia's portion of Chesapeake Bay, and some Maryland rivers. Concurrently, more post-juveniles are being observed by both fisheries managers and the fishing public. Fish of the 1982 and 1983 year classes are abundant and have a high potential spawning biomass. This spawning biomass will only be realized next year as the 1982 year class becomes fully mature. We are also beginning to see the potential restoration of striped bass in the Delaware River system. Successful striped bass production in the Kennebec River may establish a new non-migratory population in Maine. On the down side, however, the upper portion of Chesapeake Bay, which in the past was the mother lode of East Coast striped bass production, has yet to show any signs of recovery. Because this area was so important historically, we feel the urgent need to continue protecting East Coast striped bass until

the Upper Chespeake Bay recovers.

As you know, Mr. Chairman, the ASMFC is currently revising our striped bass fishery management plan to meet the current and projected needs of the fishery. Our Striped Bass Board, and Scientific and Statistical (S+S) Committee, are looking at long-term strategies to acheive the goals of the fishery management plan, i.e. to conserve, protect, and restore Atlantic Coast migratory stocks of striped bass. Among the issues that are being discussed are how to liberalize fishing regulations while maintaining adequate stock protection, taking geographic variation in fish size and abundance into account, appropriate area and seasonal closures, and size limits, as well as various lesser issues. The foundation of the revised fishery management plan regulations will be controlling the overall fishing mortality rate on East Coast striped bass at some acceptable level. This F-based management, as it is called, will be responsive to stock condition but will require adequate, continual monitoring of striped bass populations. We hope to have the fishery management plan ready for ASMFC approval at our annual meeting in September.

On the need for reauthorization of the Act, some Commissioners view the same arguments that were presented at reauthorization hearings in 1986 as still being relevant today. On one hand, the Act is viewed as an unnecessary intrusion by the Federal government into a traditional area of State management. On the other hand, to most, the Act is seen as effective in encouraging states to comply with the ASMFC fishery management plan, thereby assisting in the recovery of East Coast striped bass stocks. Commission staff polled all ASMFC Commissioners to develop a concensus on reauthorization of the Act. Commissioners were asked whether they favored or opposed reauthorization, and whether they would suggest any changes to

the Act. ASMFC currently has 41 Commissioners, 38 responded to our inquiry. Eighty-two percent of Commissioners favored reauthorization of the Act (some with amendments), 13% opposed reauthorization, and 5% abstained from voting. When this individual canvass is combined into state results, 13 states are in favor of reauthorization, one is opposed, and one state is cancelled due to opposing votes and one no-answer.

Three Commissioners proposed amendments to the Act that may be of some interest. Two suggested that Section 10b, which authorizes $200,000 for Chesapeake Bay stock replenishment, be deleted from the Act. One Commissioner suggested two amendments; first, to reauthorize the Act for five years rather than three, and second, to require that noncomplying states be subject to ASMFC approved management measures rather than a moratorium on striped bass fishing.

I would like to mention a few things that we strongly believe are needed for the long-term management of striped bass. As I've mentioned several times, adequate population monitoring is a must for any fishery management regime. We need long-term cooperative tagging, as has been established in Rhode Island, New York, Maryland, Virginia, and North Carolina with the assistance of the U.S. Fish and Wildlife Service, stock discrimination, and biological studies of striped bass to estimate the population parameters which are required for F-based management. In addition, these data will assist us in dealing with the problem of geographic variation in striped bass stocks and fisheries. Emergency Striped Bass Study funds provide a vital, significant portion of the money used for striped bass population monitoring and establishment of a firm database and are, therefore, imperative to our current efforts. Due to the importance of this program, ASMFC annually coordinates workshops to review the past years Emergency Striped Bass Study efforts and results, as well as

the findings of our own S+S Committee.

Equally important, is adequate monitoring and maintenance of environmental parameters. The early work under the Emergency Striped Bass Study on environmental factors influencing striped bass abundance has helped us to determine which abiotic factors have significant effects on striped bass production.

Mr. Chairman and members of the Subcommittee, this concludes my prepared testimony today on S. 2384. Thank you for allowing me to present the views of the Atlantic States Marine Fisheries Commission on reauthorization of the Atlantic Striped Bass Conservation Act.

ATTACHMENT 1 - ASMFC,
Law Enforcement Committee
Striped Bass Report,
May - October 1987

State enforcement agencies continue to place a high priority on the protection of striped bass, but the number of hours required to maintain inspection levels similar to the last reporting period was reduced by 38%.

Shoreside fishermen continue to be the biggest violators with a rate of 3.6 violations per 1000 inspections compared to 2.3/1000 for boats, .875/1000 Dockside, and 2.0/1000 for markets.

The courts continue to treat these violations as serious in most of the states, and this has created a deterrent in itself to a great degree. Public sentiment has also been helpful in creating an atmosphere conducive to effective enforcement. People are reporting violations more frequently.

There is a strong move afoot to establish a viable aquaculture operation in some states that would use the striped bass (hybrid) for commercial marketing purposes. We anticipate significant enforcement problems when these types of operations increase, and submitted a resolution to the Commission during the October meeting which addresses the issue of identification requirements for hybrids. This resolution has since been adopted by the Commission.

In the last month, there have been numerous reports of striped bass being caught in the Atlantic Ocean beyond the three-mile limit and brought into Maryland for shipment to those states which permit the possession and/or sale of stripers. A large number of these fish will not meet the 24-inch minimum size limit which exists in some states, and the fishermen have had difficulty finding markets. Many of the fish dealers have not forgotten the "Sting" operations which went down a couple of years ago, so we are still reaping some benefit from those events.

The attached statistical reports continue to demonstrate the commitment of state enforcement agencies to the protection of the Striped Bass.

James M. Hurley
Secretary

May - October, 1987

...Arrests and Warnings should be broken down to type of offense in the narrative summary section (IE: 10 arrests - 5 short fish, 2 untagged, 1 closed waters).

	WASHINGTON D C	MAINE	NEW HAMPSHIRE	MASSACHUSETTS	RHODE ISLAND	CONNECTICUT	NEW YORK	NEW JERSEY	DELAWARE	MARYLAND	VIRGINIA	NORTH CAROLINA	PENNSYLVANIA
1. Striped Bass Checks													
A. Shore Side Fishermen	45	669	224	3312	237	225	2933	727	740	13,566	3261	5088	1071
1. Arrests	1	9	1	9	5	11	4	4	0	31	10	0	0
2. Written Warnings	25	2	0	3	0	0	1	0	0	2	0	0	0
B. Boat Fishermen	76	534	319	212	33	240	1781	481	2430	26,772	4947	4591	621
1. Arrests	2	3	0	0	0	4	7	2	0	22	8	0	0
2. Written Warnings	46	3	0	0	0	0	0	0	0	3	0	0	0
C. Dockside Boats	0	126	135	161	6	46	981	175	440	1531	1733	2799	110
1. Arrests	0	0	0	0	0	1	4	0	0	0	2	0	0
2. Written Warnings	0	0	0	0	0	0	0	0	0	0	0	0	0
D. Wholesale/Retail Establishments	0	72	21	468	4	0	538	20	7	2030	1914	1345	0
1. Arrests	0	0	0	0	0	0	0	0	0	0	12	0	0
2. Written Warnings	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Total Enforcement Actions Taken													
A. Arrests	3	12	1	9	5	16	15	0	0	53	32	0	0
B. Written Warnings	71	5	0	3	0	0	1	6	0	10	0	0	0
3. Penalties													
A. Jail Sentences	0	0	0	0	0	0	0	0	0	2	2	0	0
B. Fines	0	55.00	100.00	184.00	74.00	80.00	350.00	600.00	0	8425	1,580	0	0
C. Other (IE: Probation, C. D., Forfeitures, etc.)													
4. Complaints of Striped Bass Investigated	7	54	46	22	10	30	68	16	7	154	142	17	0
5. Hours Spent on Striped Bass Enforcement	60	913	205	2275	215	1375	1573	1770	995	12,015	11,230	353	133

ASMFC Law Enforcement Committee

Striped Bass Report

May - October, 1987

Reporting Period Totals	May-Oct 1987
Shoreside Fishermen	32.098
Arrests	85
Warnings	33
Boat Fishermen	42,977
Arrests	48
Warnings	52
Dockside Boats	8,243
Arrests	7
Warnings	0
Wholesale/Retail Establishments	6,419
Arrests	12
Warnings	0
Total Enforcement Actions Taken	242
Arrests	146
Warnings	96
Penalties	
Jail Sentences	4
Fines	$12,111
Complaints Investigated	573
Hours Spent on Striped Bass Enforcement	27,935

NOVEMBER, 1987

...Arrests and Warnings should be broken down to type of offense in the narrative summary section (IE: 10 arrests - 5 short fish, 2 untagged, 1 closed waters).

	WASHINGTON D C	MAINE	NEW HAMPSHIRE	MASSACHUSETTS	RHODE ISLAND	CONNECTICUT	NEW YORK	NEW JERSEY	DELAWARE	MARYLAND	VIRGINIA	NORTH CAROLINA	PENNSYLVANIA
1. Striped Bass Checks	20	0	2	0	0	0	502	82	70	358	166	362	15
A. Shore Side Fisheries	0	0	0	0	0	0	0	1	0	0	0	0	0
1. Arrests	8	0	0	0	0	0	1	0	0	0	0	0	0
2. Written Warnings	25	0	10	0	0	0	159	0	150	877	442	663	3
B. Boat Fisheries	0	0	0	0	0	0	0	0	0	2	2	0	0
1. Arrests	10	0	0	0	0	0	0	0	0	1	0	0	0
2. Written Warnings	0	0	20	0	0	0	146	14	15	110	253	471	0
C. Dockside Boats	0	0	0	0	0	0	0	2	0	0	0	0	0
1. Arrests	0	0	0	0	0	0	1	0	0	0	0	0	0
2. Written Warnings	0	0	6	14	0	0	88	0	0	374	288	168	0
D. Wholesale/Retail Establishments	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Arrests	0	0	0	2	0	0	1	0	0	0	0	0	0
2. Written Warnings													
2. Total Enforcement Returns Taken	0	0	0	0	0	0	0	3	0	2	2	0	0
A. Arrests	18	0	0	2	0	0	2	0	0	1	0	0	0
B. Written Warnings													
3. Penalties	0	0	0	0	0	0	0	0	0	0	0	0	0
A. Jail Sentences	0	0	0	0	0	0	$85	0	0	375.00	0	0	0
B. Fines	0	0	0	0	0	0	0	0	0	0	0	0	0
C. Other (IE: Probation, C. O., Forfeiture, etc.)	2	0	0	0	0	0	24	3	7	17	15	2	0
4. Complaints of Striped Bass Investigated	20	0	3.5	42	0	0	256	86	210	1097.5	858	301	0
5. Hours Spent on Striped Bass Enforcement													

Striped Bass Enforcement

November, 1987

S U M M A R Y

Maryland - This month officers worked in plain clothes to check complaints of illegal striped bass fishing in the Susquehanna River Area. There was one (1) arrest and one (1) warning in the Potomac River for small striped bass. Subjects received fines and two (2) years of probation, and their fishing equipment was forfeited. In the lower Eastern Shore area there was one (1) arrest for three (3) counts of possession of striped bass. All were convicted and received fines and probation. Officers in Ocean City are investigating reports of trawlers bring in striped bass for out of state shipment.

Virginia - Stripers are being caught in pound nets and on hook and line in the Rappahannock River. Approximately 5 - 10 % of the catch is running in the 24 to 40 inch length. 90 - 95 % of the stripers being caught are undersize and are being returned to the water.

Rhode Island - Gill net activity during the latter half of the season was quiet largely due to some changes in the gill net law. Reports of bass being taken over the limit at Block Island and filleted was investigated. Due to weather conditions fishing dropped off. No stripers were observed being taken.

ATTACHMENT 2 - ASMFC,
Law Enforcement Committee
Striped Bass Report,
Onvember 1987 - March 1988

STRIPED BASS SUMMARY

NOVEMBER, 1987 - MARCH, 1988

From November through February, Striped Bass fishing activity has been light in all of the reporting states. There has been some activity in the Atlantic Ocean off of Maryland and Virginia during this period. Landings were not large in terms of poundage, but this activity generated numerous inquiries and complaints which were investigated with no significant violations detected.

During the month of March, activity increased in Maryland, Virginia, North Carolina, Connecticut, and New Jersey. Violations have been on the increase in Virginia, and numerous cases have been made. New Jersey conducted a special operation which resulted in several arrests and seizure of 560 illegal striped bass weighing 4,222 lbs.

The intensive law enforcement effort appears to be having a positive effect on the Striped Bass populations which are on the increase in Maryland, Virginia, and several of the other Atlantic States.

November 1987 - March 1988

...Arrests and Warnings should be broken down to type of offense in the narrative summary section.(IE; 10 arrests - 6 short fish, 3 untagged, 1 closed waters).

	WASHINGTON D C	MAINE	NEW HAMPSHIRE	MASSACHUSETTS	RHODE ISLAND	CONNECTICUT	NEW YORK	NEW JERSEY	DELAWARE	MARYLAND	VIRGINIA	NORTH CAROLINA	PENNSYLVANIA
1. Striped Bass Boats													
A. Shore Side Fisheries	20	0	11	0	0	4	635	132	250	3,388	1,240	1,091	16
1. Arrests	0	0	0	0	0	0	0	1	1	3	1	0	0
2. Written Warnings	0	0	0	0	0	0	1	0	0	0	0	0	0
B. Boat Fisheries	25	0	0	0	0	0	196	37	250	2,758	1,727	2,180	90
1. Arrests	10	0	0	0	0	0	0	16	0	8	92	0	0
2. Written Warnings	0	0	0	0	0	0	0	0	0	1	0	0	0
C. Dockside Boats	0	0	87	0	0	0	161	41	100	435	1311	1,848	0
1. Arrests	0	0	0	0	0	0	0	4	0	0	2	0	0
2. Written Warnings	0	0	0	0	0	0	0	0	0	0	0	0	0
D. Wholesale/Retail Establishments	0	0	93	255	0	0	472	20	15	2,025	1,503	908	0
1. Arrests	0	0	0	0	0	0	0	5	0	0	1	0	0
2. Written Warnings	0	0	0	2	0	0	1	0	0	0	0	0	0
2. Total Enforcement Actions Taken													
A. Arrests	10	0	0	0	0	0	0	26	1	11	96	0	0
B. Written Warnings	0	0	0	8	0	0	2	0	0	1	0	0	0
3. Penalties													
A. Jail Sentences	0	0	0	0	0	0	0	0	0	0	0	0	0
B. Fines	0	0	0	0	0	0	305	200	0	456	1,553	0	0
C. Other (IE: Probation, C. D., Forfeitures, etc.)	0	0	0	0	0	0	0	0	0	0	0	0	0
4. Confiscate of Striped Bass Investigated	2	0	0	0	0	3	33	16		38	229	30	0
5. Hours Spent on Striped Bass Enforcement	20	0	42.5	560	0	11.5	510	790		7,022	6,999	1,768	6

Striped Bass Report

March, 1988

Maryland - Striped Bass activity this month included making four arrests and the confiscation of fishing gear. The arrests included the following: One (1) arrest in the Chester River for illegal net in the spawning area. Two (2) arrests in the spawning area of the Transquaking River, and one (1) arrest for possession of Striped Bass as a result of undercover operation.

Virginia - Striped Bass are being caught on both the seaside and bayside of the Eastern Shore. In the Rappahannock River area, one summons was issued for possession of striped bass during closed season. The case is pending at this time. In the James River area, gill net fishermen were observed throwing dead striped bass (approximately 3,000 lbs.) overboard. Fourteen cases are pending court action in the James River area.

Connecticut - There were several complaints of Striped Bass fishing in the Connecticut and Thames River. These were investigated and no violations were found.

New Jersey - During March of 1988 officers from the Marine Unit with assistance from two National Marine Fisheries Service Agents and one Inland Conservation Officer attacked an on-going problem of illegal netting of Striped Bass in the Delaware Bay. Operation "Rock and Roll" ended on March 28, 1988 with the arrest of a wholesale fish dealer and seizure of 560 illegal striped bass weighing 4,222 lbs. Officers apprehended two groups of gill netters on the water, one group twice, and recovered 74 short stripers illegally taken by net. (Detailed Report Attached).

MARCH, 1988

...Arrests and Warnings should be broken down to type of offense in the appropriate coastal section (IE: 10 arrests - 6 short fish, 2 entangled, 1 closed waters).

	WASHINGTON D.C.	MAINE	NEW HAMPSHIRE	MASSACHUSETTS	RHODE ISLAND	CONNECTICUT	NEW YORK	NEW JERSEY	DELAWARE	MARYLAND	VIRGINIA	NORTH CAROLINA	PENNSYLVANIA
1. Striped Bass Stocks													
A. Shore Side Fishermen	0	0	3	0	0	4	37	18	65	2521	716	190	25
1. Arrests	0	0	0	0	0	0	0	0	0	1	1	0	0
2. Written Warnings	0	0	0	0	0	0	0	0	0	0	0	0	0
B. Boat Fishermen	0	0	0	0	0	0	22	26	150	1179	714	319	7
1. Arrests	0	0	0	0	0	0	0	16	0	3	28	0	0
2. Written Warnings	0	0	0	0	0	0	0	0	0	0	0	0	0
C. Dockside Boats	0	0	18	0	0	2	10	6	70	393	524	306	0
1. Arrests	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Written Warnings	0	0	0	0	0	0	0	0	0	0	0	0	0
D. Wholesale/Retail Establishments	0	0	24	109	0	0	80	9	12	356	394	170	0
1. Arrests	0	0	0	0	0	0	0	5	0	0	0	0	0
2. Written Warnings	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Total Enforcement Actions Taken													
A. Arrests	0	0	0	0	0	0	0	21	0	4	29	0	0
B. Written Warnings	0	0	0	0	0	0	0	0	0	0	0	0	0
3. Penalties	0	0	0	0	0	0	0	0	0	0	0	0	0
A. Jail Sentences	0	0	0	0	0	0	0	0	0	0	0	0	0
B. Fines	0	0	0	0	0	0	[1]25	[1]200	0	0	[2]70	0	0
C. Other (IE: Probation, C. S., Forfeitures, etc.)	0	0	0	0	0	0	0	0	0	0	0	0	0
4. Complaints of Striped Bass Investigated	0	0	0	0	0	3	2	8	2	14	114	0	0
5. Hours Spent on Striped Bass Enforcement	0	0	13.5	92	0	11.5	63	516	220	2948	2214	309	6

New Jersey Striped Bass Report of March 1988

During March of 1988 officers from the Marine Unit with assistance from two National Marine Fisheries Service Agents and one Inland Conservation Officer attacked an ongoing problem of illegal netting of striped bass in the Delaware Bay. Operation "Rock and Roll" ended on March 28, 1988 with the arrest of a wholesale fish dealer and seizure of 560 illegal striped bass weighing 4,222 lbs. Officers apprehended two groups of gill netters on the water, one group twice, and recovered 74 short stripers illegally taken by net. The following is a breakdown of summonses and individuals apprehended during operation "Rock and Roll."

			Min	Max
Jack W. King	(wholesale fish dealer)			
one summons	560 counts	Possession of bass under 33"	$56,000	$1,680,000
one summons	555 counts	Possession of bass over limit	55,500	1,665,000
one summons	1 count	Offer for sale (Fish & Game)	100	3,000
one summons	1 count	Offer for sale (Health)	100	3,000
one summons	1 count	Inaccurate Record Keeping	100	3,000
Dale Hickman Jr	1st Offense			
one summons	29 counts	Possession of bass under 33"	$ 2,900	$ 87,000
one summons	19 counts	Possession of bass over limit	1,900	57,000
one summons	1 count	Illegal Netting of bass	100	3,000
Mark V. Nichols	1st Offense			
one summons	29 counts	Possession of bass under 33"	$ 2,900	$ 87,000
one summons	19 counts	Possession of bass over limit	1,900	57,000
one summons	1 count	Illegal Netting of bass	100	3,000
Dale Hickman Jr	2nd Offense			
one summons	42 counts	Possession of bass under 33"	$ 8,400	$ 210,000
one summons	32 counts	Possession of bass over limit	6,400	160,000
one summons	1 count	Illegal Netting of bass	200	5,000
Mark V. Nichols	2nd Offense			
one summons	42 counts	Possession of bass under 33"	$ 8,400	$ 210,000
one summons	32 counts	Possession of bass over limit	6,400	160,000
one summons	1 count	Illegal Netting of bass	200	5,000
Jeffery H. Moore				
one summons	3 counts	Possession of bass under 33"	$ 300	$ 9,000
one summons	1 count	Illegal Netting of bass	100	3,000
Timothy M. Frazer				
one summons	3 counts	Possession of bass under 33"	$ 300	$ 9,000
one summons	1 count	Illegal Netting of bass	100	3,000
21 summonses	1374 counts		$152,400.00	$4,422,000.00

STATEMENT OF W.P. JENSEN, TO THE
U.S. SENATE SUB-COMMITTEE ON
ENVIRONMENTAL PROTECTION - S. 2384
May 25, 1988

Mr. Chairman, members of the Committee, thank you for the opportunity to present views on S. 2384, a bill to reauthorize the Atlantic Striped Bass Conservation Act and appropriations for the Emergency Striped Bass Study for fiscal years 1989 through 1991. I am W. P. Jensen, Director of Fisheries, Maryland Department of Natural Resources.

Maryland was a key state in efforts which resulted in the development and adoption of a coastal fishery management plan for striped bass by the Atlantic States Marine Fisheries Commission (Commission). The Act has been a strong influence in fostering joint management of striped bass stocks by all states from Maine to Florida. The recovery of the coastal stocks has been dramatic, particularly in Chesapeake Bay where we have maintained a total moratorium since 1985. We now see evidence of recovery, particularly the presence of the 1982 year class in the Bay spawning population, which is highly encouraging. The objective of increasing the spawning population is clearly being achieved rapidly. The remaining objective to be reached is a three year running average of 8 in the Maryland young-of-year survey. When this objective is achieved the stocks will be determined to be restored and capable of sustaining a fishery. In plain words, we need to begin planning a new phase of striped bass management; managing a fishery on a recovered population so that we do not repeat the boom and bust cycles of the past.

The Striped Bass Conservation Act should be reauthorized with that purpose in mind and, therefore, should be amended to meet that objective.

First, the Act should be amended to require the Secretary(s) to impose the applicable management measures in State waters if the State(s) are determined to be not in compliance by the Commission. Because we must look forward to managing a fishery rather than restoring a depleted population, this would be an appropriate action. Recall that one of the underlying principles of the Commission plan is to have unified management measures in each State to avoid the confusion of different and conflicting State regulations that were determined to be the major problems prior to the present plan.

Second, the Act should be amended to include a provision that striped bass caught in the EEZ must conform to the requirements of the State where landed. Adoption of this provision would do two things; (1) it would include the EEZ portion of the striped bass stock in the unified State management plan, and (2) it would eliminate the need for a separate Fishery Management Plan by the Regional Management Councils.

Appropriations for the Emergency Striped Bass Study have been instrumental in the studies undertaken to both understand the reasons for the decline of the coastal stocks and to assess the continuing status of the stocks. This funding should be continued at least until the stocks have been determined to have recovered and a management regime is in place in each State with the support of the Federal agencies through the Atlantic Striped Bass Conservation Act. In Maryland we have utilized Emergency Striped Bass Study funds, Wallop-Breaux funds, and State funds to institute a comprehensive striped bass research and stock assessment program. Information from the Chesapeake Bay studies has been a key part of understanding the East Coast striped bass populations. In concert with other States from Maine to North Carolina, we anticipate a continuing commitment to striped bass research and stock assessment. We believe that continuation of Federal funding is an appropriate partnership of Federal and State capabilities to restore and manage striped bass.

Maryland Department of Natural Resources

Tidewater Administration
Tawes State Office Building
580 Taylor Avenue
Annapolis, Maryland 21401

William Donald Schaefer
Governor

Torrey C. Brown, M.D.
Secretary

June 23, 1988

Honorable George J. Mitchell
Chairman on Environmental Protection
Committee on Environment and Public Works
United States Senate
Washington, D.C. 20510

Dear Mr. Chairman:

During the hearing on the reauthorization of the Atlantic Striped Bass Conservation Act, there was discussion of the impact of increased nutrients on striped bass in Chesapeake Bay.

Acid deposition has been identified as both a contributor to the acidification of waterways in Maryland and as a cause of mortality in striped bass and yellow perch larvae. Acid deposition being experienced in Maryland is airborne and new evidence indicates that this acid deposition is one of the sources of increased nitrogen in Bay waters.

Air pollution is a problem that does not stop at state borders. It is estimated that most of the emissions that cause acid rain in Maryland originate outside of the state. Rainfall in Maryland is at least 10 times more acidic than normal.

As you are aware, in December of 1987, Maryland, Virginia, Pennsylvania, the District of Columbia, and the Environmental Protection Agency signed a new agreement that significantly increases our commitment to restore the Chesapeake Bay. A major component of that agreement is our commitment to reduce nutrient pollution, including nitrogen, by 40 percent by the year 2000.

Continued attention to the restoration and management of striped bass through reauthorization of the Atlantic Striped Bass Conservation Act is essential, but this legislation is only part of the solution. Equally strong commitments must be

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made to halting the incremental destruction of fisheries habitat by acidification and high nitrogen levels. The commitments by the Bay states to restore the living resources of Chesapeake Bay can be greatly enhanced by amendments to the Clean Air Act.

Thank you for introducing S-1894, the Clean Air/Acid Rain legislation. Enactment would make great progress toward correcting this serious problem.

Sincerely,

W. P. Jensen
Director, Fisheries

WPJ/lk

cc: Randy Collins
Bruce Gilmore

Sport Fishing Institute

1010 Massachusetts Avenue, N.W. (Suite 100), Washington, D.C. 20001 (202) 898-0770

STATEMENT OF

NORVILLE S. PROSSER

FOR THE

SPORT FISHING INSTITUTE

BEFORE THE

SENATE SUBCOMMITTEE ON ENVIRONMENTAL PROTECTION

REGARDING

S. 2384

ATLANTIC STRIPED BASS CONSERVATION ACT

MAY 25, 1988

The National Non-Profit Fish Conservation Organization

Mr. Chairman and members of the Subcommittee, my name is Norville S. Prosser and I am Vice President of the Sport Fishing Institute (SFI). On behalf of SFI I want to thank the Subcommittee for the opportunity to appear today to present our views regarding S. 2384, a bill to reauthorize appropriations to carry out the Atlantic Striped Bass Conservation Act and the Emergency Striped Bass Study. SFI is a non-profit, tax exempt, broadly-based conservation organization, staffed entirely by fisheries scientists and economists. The Institute's programs are devoted to the protection, enhancement, and wise utilization of America's freshwater and marine aquatic resources, especially the fish populations and their essential habitats. Our principle objective, by means of a program of ecological research, conservation education, and professional service, is to help develop and promote optimum opportunity for Americans to engage in healthful and rewarding recreational fishing. Our financial support comes from a broad range of sport fishing industry members that depend upon the conservation and expansion of our nation's aquatic resources for their livlihood and from thousands of anglers and other concerned citizens.

When originally passed in 1984, the Atlantic Striped Bass Conservation Act forged a delicate balance between the states' long-held purview to manage territorial seas fisheries, in this case through the Atlantic States Marine Fisheries Commission (ASMFC), with a federal forcing mechanism that did not preempt state management authority, but did require all affected states to adopt consistency in regulatory enforcement. To date, the unique partnership forged by the Act can only be characterized as a success story of truely remarkable proportions.

The enabling third amendment to the ASMFC'S Striped Bass Plan, designed to prevent directed fishing mortality on the 1982 and subsequent year classes of striped bass until 95 percent of the females from these age classes spawn at least once, has resulted in a dramatic improvement in potential reproduction and recruitment to the fishery.

The sport fishing industry produced $28.2 billion in retail sales in 1985 according to the U.S. Department of Commerce. These sales provided approximately 750,000 jobs in the United States. This industry has made a significant investment in its future by supporting the Atlantic Striped Bass Conservation Act from its conception. The Atlantic coast recreational fishery for striped bass generated $89,262,000 in retail sales in 1979 which equates to over $140,000,000 in today's dollars. These sales resulted from 2,170,000 fishing trips on which 1,171,000 striped bass were caught. The 1986 recreational fishery caught only 13 percent (150,000 striped bass) of the 1979 catch and the number of recreational trips and retail sales in the sport fishing industry have declined similarly. Therefore, we in the sport fishing industry have made significant economic sacrifices to conserve this important fish stock.

Although members of the sport fishing industry are anxious for the striped bass sport fishery to reopen under proper conservative stewardship, and thereby to again be called upon to provide the goods and services demanded by recreational fishermen in pursuit of this highly-prized sport fish, we believe that continued maintenance of this Act is necessary to ensure that the investment made thus far will be seen through to fruition. It is imperative that we continue the strict conservation measures that currently exist for this stock. By allowing the stocks to rebuild, it will be possible to develop a "world class"

sport fishery for striped bass in the future. As has been the case with the Lake Michigan salmon and the Lake Erie walleye, it is possible that through sound conservation measures and management with the objective of maximizing social and economic benefits, the Atlantic coast striped bass fishery can become a world class sport fishery. For this dream to come true, the Atlantic Striped Bass Conservation Act must be reauthorized. We believe that by continuing the conservation measures used to date, it will be possible in the not too distant future to have a fishery that returns tremendous economic and social benefits to this nation. SFI strongly supports S. 2384.

The entire spectrum of user groups has sacrificed to provide the protection required by the 1982 and subsequent year classes (for an interval of years of unexpected duration), to produce the reproduction and recruitment essential to the restoration of the coastal stocks. The essential closure of the harvest fishery on this portion of the stocks, while difficult for everyone, has been perhaps easier on management personnel than will be the reopening of the fishery under a management strategy designed to maximize societal benefits. The data acquisition and enforcement requirements of an open fishery will amplify monitoring demands far beyond those of a closed fishery. The demands of scientific monitoring to ensure sustained yields of social benefits from this common property resource, will necessitate financial investments currently unavailable to most of the coastal management agencies.

Maryland is the only state covered by the ASMFC's Striped Bass Management Plan that has adopted a user fee in the form of a recreational angler license (for Chesapeake Bay waters only). Some interest groups have proposed a federal striped bass stamp to help

provide the sustained, dedicated funding that will be required to afford the necessary management of the Atlantic stocks of striped bass. SFI has consistently favored the development and adoption of carefully structured recreational user fees for marine fishermen of similar intent and design to the fee requirements accepted by freshwater fishermen in every state, and by the marine anglers in eight coastal states. The justification for SFI's industry members' support for such licensing is simple. Recreational fishing, and the dependent industry, rely fully upon the stewardship agencies' abilities to provide sustained, good fishing experiences for the public. User fees offer a proven source for the required funding.

Although a user fee is deemed necessary and warrented for the purpose of striped bass management, licensing of anglers and hunters within state borders, including waters of the territorial sea, has always been the most strongly guarded of state perogatives. SFI supports consideration only of a system of state fees in this regard.

We support congressional instruction to the affected Atlantic coastal states to undertake an examination of the best strategy to implement a system of state user fees to provide the essential financial support necessary for striped bass management. It has been suggested by some that the concept could be broadened to consider an interjurisdictional fisheries user fee. This concept appears to warrent close study as well. It should be recognized that a problem certain to arise is that the striped bass fishery will be reopened to the public, with all the management pressures that that action will create, prior to adoption by the management agencies of a properly designed fees system to provide the dedicated funding needed to meet the management

challenge. Therefore, this effort should move forward as expeditously as possible.

While the industry members of SFI support the concept of a user fee, it must be made clear that there are several aspects that would make such a fee system totally unacceptable to the sport fishing industry. Among the most important deficiencies would be: (1) adoption of a fee system that would significantly inhibit recreational angler participation due to cost or ease of attainment; (2) failure to apply the fee system equitably to all extracting groups (recreational and commercial) in direct proportion to the magnitude of the extraction; (3) utilization of revenues generated by such a fee system as an offset or replacement for existing funding sources, including federal general appropriations; and (4) failure to earmark all resulting revenues for research, mangement, enforcement, and administrative costs directly required to afford proper stewardship for the subject fish stocks.

In summary, the Sport Fishing Institute recognizes that the Atlantic Striped Bass Conservation Act has well served the sport fishing fraternity. Without the Act, the potential for an attractive recreational fishery with significant social and economic yields to the nation, would not be on the horizon. Reauthorization of funding authority for the Act and for the Emergency Striped Bass Study are imperative. As the time approaches when the striped bass fishery will once again be fully accessible to the public, management requirements will escalate considerably. SFI believes that some source of dedicated funding to support proper management (including data acquisition to guide both conservation and allocation decisions), must be forthcoming. The imposition of a federal migratory striped bass stamp will meet with strong and unified opposition by the states and others. However, a state issued user fee may offer a plausible alternative. The ASMFC should be charged with the timely examination of alternatives for imposition of some such user fee system that would include all user groups in an equitable and fair manner.

Thank you.

STRIPERS UNLIMITED
P.O. Box 3045
So. Attleboro, MA 02703

A Service Club
for Striper Fishermen

May 6, 1988

My name is Robert Pond. I am a manufacturer of fishing lures, primarily for striped bass and bluefish.

I was born in New York and grew up in New Rochelle. Since I was a small child, I have fished in Long Island Sound, which awakened in me a love of the natural environment. I attended forestry college at Syracuse University, which gave me a deep interest in conservation.

As executive director of Stripers Unlimited, an organization dedicated to preserving the striped bass and its habitat, I have been studying and photographing striped bass eggs since the mid-1960s.

My concern with the estuarine zone covers many years. All estuarine zones are now in serious condition due to chemical pollutants, dredging and filling and other detrimental activities. My main concern has been with striped bass, although other estuarine fishes are also exhibiting the very same symptoms as the striper.

During the last 20 years, we have watched the continued decline of striped bass on the east coast. Though there is a seeming comeback because of the increased number of small stripers along the shore, the increase is more due to a lack of fishing pressure and the moratorium in Maryland and Delaware than increased productivity. Reproduction in Chesapeake Bay is <u>not</u> improving. The Verplanck, N.Y. hatchery is having increasing trouble. Last spring it was evident that the brood stock, which produces the unique and valuable "floating egg" in Chesapeake Bay, had suffered a drastic decline and was

practically non-existent among the fish handled that year in the hatchery.

Just another species slowly disappearing----only one of many. During the Dinasaur Age animal species became extinct at a rate of 1 every 1000 years. At the beginning of the Industrial Age, animal species became extinct at the rate of 1 every 10 years. Today, plant and animal species become extinct at the rate of 1 every hour. It is estimated by the World Wildlife Fund that nearly 17% of all plant and animal species remaining on earth will become extinct by the turn of the century. (ALGENY-Jeremy Rifkin). Yet concern is not evident. We hear bathers complain about being denied access to beaches for the sake of one or two pairs of sea birds facing extinction, developers complaining about being denied the right to build because of the possibility of destroying some rare form of wildlife.

We continue to poison our drinking water, our soil and even the ocean itself with man-made persistent chemicals. Rachel Carson warned us of these poisons 25 years ago, but we, in our arrogance, ignored the warning.

We can no longer do so. We are an inextricable part of the same ecosystem as all the fish and wildlife we, in our ignorance and arrogance, are driving to extinction. The poisoned environment is the legacy we are leaving to our children and grandchildren.

No one yet understands the long term effects of a chemically altered environment. The methods by which chemical pollution causes reproductive failure is unknown. We see only the results. This is a long term genetic problem passing from one generation to the next, and we, as part of the ecosystem are not immune to such mutations.

Short term answers are like applying a band-aid when major surgery is required. Research being conducted, at present, is not likely to answer the problem of the decline in fisheries today. It is like looking for a surface wound on which to place the band-aid, while the real wound is an internal hemmorhage.

We cannot afford to sit back and ignore the warnings we see all around us. We cannot allow our government to drag its collective feet until it is too late to correct the problems besetting our environment. We cannot afford to plead ignorance to the many signs we see everywhere. We must stand up and be counted before we join in that sure march to extinction. We must fight for the environment and our own survival and that of our children.

In 20 years we are no farther ahead in finding a solution to the striped bass problem. Future research must be focused on the eggs and reproductive systems of the brood stock, where the major problem lies. We have been begging the scientific community for such research for many years as mandated in the Chafee Emergency Striped Bass Act. Many millions of dollars have been directed at other areas, but since the major area of mortality occurs before the eggs hatch, a major inter-diciplinary approach at this earliest life stage is essential!

We must demand changes in the way research is being conducted.

Fisheries biologists speak of creating resistant strains of fish which can adapt to a polluted environment. However, adaptations to a stressed environment are genetically accomplished by mutations, most of which are harmful, resulting in the protection of the parent stock, but, we believe, causing problems in the reproductive system as well as other problems. We note the apparent inability of smaller striped bass to produce viable eggs in the

hatchery.

By removing the eggs from wild fish and raising them in hatchery ponds, you remove the process of natural selection, thereby preserving the weak stock. When returned to the wild, they then mix with the wild stock, weakening the wild strain further.

We disagree with the premise that there is reduced ability of parent stock to adapt to a changed environment. Our observation of striped bass eggs and larval development lead us to believe that adaptation to the stressed environment by striped bass is causing the observed reproductive failure in the smaller stock. They do not appear to produce viable eggs and even the older, larger breeders, which are the mainstay of hatchery operations, are producing eggs with observable abnormalities.

We see no permanent rebound of the migratory striped bass stocks in the future unless these problems are addressed by an aggressive crossbreeding program to assist natural selection in producing a stronger strain.

Chemical pollutants have changed genes and chromosomes in striped bass eggs and in the eggs of other estuarine fishes as well. Where egg mortality in hatcheries used to amount to about 20%, it is now up to 70%.

Dr. Arlene Longwell, geneticist at the National Marine Fisheries Service lab in Milford, Connecticut has been studying eggs from fishes from the New York Bight and Long Island Sound, where chemical pollution is very high. She has also observed genetic changes. Her research has revealed high mortality rates among Atlantic mackerel, cod and pollack eggs and embryos. She claims it is similar to what DDT did to osprey eggs in earlier years.

Although some are beginning to take her findings seriously, she still finds that most fishery biologists lay the decline in fisheries to predation and overfishing.

We must change that view if we are to save our fisheries resource.

International Association of Fish and Wildlife Agencies
(Organized July 2, 1902)
444 North Capitol St., NW, Suite 534, Washington, DC 20001 (202) 624-7890
Jack H. Berryman, Executive Vice President

STATEMENT OF THE INTERNATIONAL ASSOCIATION OF FISH AND WILDLIFE AGENCIES
ON S. 2384, REAUTHORIZATION OF THE STRIPED BASS CONSERVATION ACT
FOR THE SENATE SUBCOMMITTEE ON ENVIRONMENTAL PROTECTION
May 25, 1988
by
Gordon C. Robertson, Legislative Counsel

The International Association of Fish and Wildlife Agencies, founded in 1902, is a quasi-governmental organization of public agencies charged with the protection and management of North America's fish and wildlife resources. The Association's governmental members include the fish and wildlife agencies of the states, provinces and federal governments of the U.S., Canada, and Mexico. All 50 states are members. The Association has been a key organization in the promotion of the principles of sound resource management and the strengthening of federal, state and private cooperation in protecting and managing fish and wildlife and their habitats in the public interest.

The Association supports a 3-year reauthorization of the Striped Bass Conservation Act and opposes any amendments. We are especially opposed to any amendments that would impose a federal striped bass stamp; allow greater federal authority; or a more liberal harvest.

The fish and wildlife resources occurring within the boundaries of, and in the Territorial Seas adjacent to, individual states are held in trust by the states for the enjoyment, appreciation, economic and scientific benefit of present and future generations. A high priority of the state members of this Association is the development and/or maintenance of adequate stocks to ensure the aforementioned benefits.

Traditionally, the states and federal fishery agencies have cooperatively and jointly implemented programs for shared marine and estuarine fishery resources. In state waters, fisheries are regulated by the states, with federal participation in law enforcement and habitat conservation, as well as technical and financial support. In a similar fashion, fisheries in the Exclusive Economic Zone are regulated by the federal government, and states provide substantial technical support and assistance in law enforcement, data collection and habitat conservation. The Association strongly recommends the continued maintenance of this essential relationship which has taken many decades to develop.

As previously indicated, this Association is strongly opposed to any federal fishing license or stamp. Licensing is the prerogative of the states and several are currently building public and legislative support for their own state marine licensing program.

There has been substantial state and federal progress in management of shared marine and estuarine fishery resources over the past 15 years. This progress has manifested itself in many ways including: cooperative enforcement agreements between the National Marine Fisheries Service (NMFS) and the states and cooperative investigations on specific enforcement problems; active state participation in federal Fishery Management Council functions; numerous formal and ad hoc cooperative state-federal fishery data collection projects; establishment of federally assisted fishery management programs such as the Atlantic States Marine Fisheries Commission's (ASMFC) Interstate Fisheries Management Program. State marine fishery managers and the federal services are continuing to work to strengthen the partnership, the quality of our programs, and the benefits of improved management to marine fisheries.

Because it provides for the possibility of federal regulation of fisheries in state waters, the Atlantic Striped Bass Conservation Act (ASBCA) is not consistent with traditional state and federal roles. The Congress, however, has thoroughly demonstrated legitimate and historic interest in striped bass. Congressional leadership, in enacting and continuing to support the Anadromous Fish Conservation Act, the Emergency Striped Bass Study and similar initiatives, has clearly provided the basis for insuring that federal investments in striped bass restoration lead to success.

Furthermore, Congress carefully crafted the ASBCA to incorporate provisions which offset critical states' rights concerns. These features include the provision that the Atlantic States Marine Fisheries Commission, and not federal executive agencies, has sole authority to determine what management measures striped bass resources require. Moreover, the Commission members must initially determine a state not to be in compliance with the provisions of the Interstate Plan before the Secretaries of Interior and Commerce can act. These two provisions appropriately preserve the interests and roles of state governments in management of striped bass in their waters.

Lastly, it is indisputable that ASBCA has been effective. All states have been, and remain, in compliance with the terms of the Interstate Plan despite strong user pressure in many states and legislative initiatives in some, to retreat from those provisions. These carefully crafted aspects of the ASBCA are important and changing them could:

1. Disrupt the progress of cooperative implementation of all aspects of fishery management, including enforcement cooperation between one or more states and the federal government.

2. Cause difficulties associated with enforcing a striped bass fishing moratorium in one or more states by already overwhelmed federal fishery enforcement agencies. This could lead to a loss of credibility in federal and interstate fishery management.

3. Cause an increase in federal striped bass regulatory efforts at the expense of other already chronically underfunded fishery programs. This concern is exacerbated by continuing Administration proposals to dramatically reduce the budget for fishery management programs.

Amendments to strengthen the federal role by authorizing the Secretaries of Commerce and Interior to approve the Interstate Plan, or to initiate sanctions against a state absent an ASMFC finding, would tip the provisions of ASBCA into clearly objectionable areas of federal preemption. The fact that this issue has arisen clearly demonstrates the dangers and problems inherent in any discussion of federal regulation of fishing in state waters.

As previously stated, we support an unamended reauthorization of an Act that has worked very well. As presently constituted, the ASBCA insures that the Atlantic States Marine Fisheries Commission states, and not federal executive agencies, have the key role in striped bass management decisions. The Association recognizes that the ASBCA is a well-thought and carefully crafted reflection of Congressional interest and historic leadership in management of restoration in striped bass stocks in the northeastern United States.

The Association oppposes any initiative which would extend the provisions and procedures of this Act to the management of other species of marine fish and shellfish. We would likewise oppose any amendment which would authorize federal approval of the Interstate Plan or authorize the Secretaries to initiate federal regulation in state waters absent a finding of non-compliance by ASMFC.

Working for the Nature of Tomorrow

NATIONAL WILDLIFE FEDERATION

1412 Sixteenth Street, N.W., Washington, D.C. 20036-2266 (202) 797-6800

COMMENTS OF

THE NATIONAL WILDLIFE FEDERATION

ON

S. 2384 -- A BILL TO AUTHORIZE APPROPRIATIONS TO CARRY OUT THE ATLANTIC STRIPED BASS CONSERVATION ACT FOR FISCAL YEARS 1989 THROUGH 1991, AND FOR OTHER PURPOSES

FOR THE SUBCOMMITTEE ON ENVIRONMENTAL PROTECTION OF THE SENATE ENVIRONMENT AND PUBLIC WORKS COMMITTEE

Prepared by

Steven Moyer
Legislative Representative -- Fisheries

Raymond J. Haak

Fisheries and Wildlife Division
Resources Conservation Department
National Wildlife Federation

May 25, 1988

The National Wildlife Federation (NWF) welcomes this opportunity to present comments on S. 2384, a bill to reauthorize appropriations for the Atlantic Striped Bass Conservation Act (P.L. 98-613) and the Emergency Striped Bass Research Study (Section 7 of P.L. 89-304) for three years.

The NWF is the Nation's largest non-profit conservation-education organization, with over five million members and supporters throughout the U.S. and in 51 affiliated state- and territory-wide organizations. The NWF has a longstanding commitment to striped bass conservation, including advocating increased levels of funding for scientific research on striped bass through the Emergency Striped Bass Research Study (Emergency Study), supporting full implementation of the Atlantic States Marine Fisheries Commission's (ASMFC) striped bass fisheries management plan, and endorsing the Atlantic Striped Bass Conservation Act (Conservation Act). We are submitting these comments for inclusion in the record for the hearing held May 25, 1988 by the Subcommittee on Environmental Protection of the Senate Environment and Public Works Committee in regard to S. 2384.

The NWF supports S. 2384. The two pieces of legislation proposed for reauthorization by this bill have proven to be timely and effective in helping to restore Atlantic striped bass stocks. They provide a careful balance of state and federal responsibilities for conducting research and management of striped bass. Coastwide, striped bass are showing encouraging signs of recovery, in large part due to the Atlantic Striped Bass Conservation Act. But this recovery must not be jeopardized by premature relaxation of harvest restrictions or failure to continue vital research. Therefore, reauthorization of these pieces of legislation is of critical importance for striped bass conservation into the foreseeable future.

Importance of Striped Bass to the Nation

Abundant stocks of striped bass historically have provided substantial benefits to the Nation, in terms of food, recreation, and jobs. During this century a large recreational fishery for striped bass has developed on the Atlantic coast. A federal survey of the striped bass recreational fishery in 1970 estimated 70 million pounds of striped bass were harvested. Additionally, commercial fishing for striped bass has been an Atlantic coast tradition since Colonial times. Commercial harvest during this century reached a peak in 1973 of 14.7 million pounds.

Therefore, the severe decline in striped bass stocks which occurred in the late 1970s and early 1980s had significant social and economic impacts. A 1984 study of these impacts (funded by the Emergency Study) estimated that the Atlantic coast region lost 7,500 jobs and $218 million in economic activity between 1973 and 1980.

By the late 1970s, a complete collapse of these valuable Atlantic striped bass stocks seemed imminent. The impending collapse focused awareness on the lack of knowledge of the causes of the decline and basic biological data on striped bass stocks, as well as the apparent inadequacy of the harvest management regime in place at the time. Congressional response to the problem was enactment of the Emergency Study in 1979, and the Conservation Act in 1984.

Benefits of the Emergency Study

The Emergency Study was enacted to provide federal funds to coordinate and augment state and federal research on striped bass stocks and reasons for decline of these stocks. Its provisions required research on abundance and distribution of striped bass stocks, the amount and location of spawning, the causes of mortality including the effects of pollution, and the economic value of the commercial and recreational striped bass fisheries. The NWF believes the Emergency Study has provided information on these subjects

which has added considerably to striped bass conservation efforts. Significant benefits provided include the following:

• A greater understanding of the importance of overharvest as a factor leading to stock declines. Population modelling combined with harvest and biological data have yielded substantial evidence to implicate overharvest as a major cause of the stocks' decline.

• Critical biological data essential to management efforts, such as age at sexual maturity, growth rates, distribution and migratory patterns, and age composition of stocks, have been uncovered.

• Evidence implicating poor water quality conditions in the Chesapeake Bay and its tributaries, the primary producers of Atlantic striped bass, has been discovered. Laboratory and field studies have demonstrated that waters of the Bay and its tributaries can be toxic to striped bass. Specifically, acidification and contamination of these waters have been shown to reduce survival of eggs and juveniles, as well as to stress older individuals.

• Economic studies (mentioned above) have demonstrated substantial economic impacts on the region resulting from decline of the stocks.

Although much has been learned from this program, additional information is needed as the stocks begin to recover. Of particular importance will be continued research and monitoring of key stock characteristics, such as juvenile and adult abundance, age composition, migratory patterns, and reproductive success. This information will be important for ASMFC and individual state harvest management decisions. In addition, the development of efficient and effective monitoring programs for the commercial and recreational fisheries will be essential for maintaining an optimum level of fishing. Furthermore, research should continue on the relationships between water quality and striped bass production to provide information for formulating policies to improve water quality, such as better controls on point and nonpoint pollution and protection of the Bay's remaining 425,000 acres of wetlands. Finally, additional documentation of the economic benefits accruing from increasing striped bass stocks also is a need which should be addressed by the research program.

Benefits of the Conservation Act

The Conservation Act was enacted the better to control harvest of striped bass, which under state authority, had been "...diverse, inconsistent, and intermittent..." according to Section 2 of the Act. Despite years of efforts by the ASMFC, some states had been unwilling to adopt

regulations sufficiently stringent to conserve properly striped bass stocks. The Conservation Act, passed in 1984, required that the Secretary of Commerce review the ASMFC's determinations of state compliance with the striped bass Fishery Management Plan (FMP) adopted by the ASMFC. Under this authority, the Secretary is empowered to place a harvest moratorium on those states which the ASMFC determines are not in compliance with the FMP.

In 1981, the ASMFC completed, and the member states adopted, the FMP. Two amendments were added in 1984, and finally, the key "Amendment 3" was added to the FMP in 1985, which required reducing the harvest of the 1982 year class females, and of all females of subsequent year classes, to zero until 95% of the females of these year classes had spawned at least once. This restriction was to remain in effect until the Maryland juvenile index (an index of reproductive success) reached a specific threshold. Thus, the threat of a federal harvest moratorium was "married" to the FMP agreed upon by the states through the ASMFC.

Results of this marriage have been impressive to date. All states, to their credit, currently are in compliance with the striped bass FMP. Some states, such as Maryland and Delaware, have even enacted stricter conservation measures than required by the FMP.

A striking example of the effectiveness of the Conservation Act occurred in January of 1987 when the ASMFC determined that New Jersey and the District of Columbia were not in compliance. By judicious use of its authority, the U.S. Fish and Wildlife Service and the National Marine Fisheries Service (representing the Secretaries) helped to bring New Jersey and the District of Columbia into compliance by March of the same year. This provided substantial protection for striped bass in waters of New Jersey and the District of Columbia.

The most encouraging illustration of the Act's effectiveness, however, are the numerous signs of striped bass recovery coastwide. State and federal biologists last year reported substantial improvement in reproductive success in several key Chesapeake Bay tributaries, especially the Potomac, and in the Hudson River as well. Adult abundance appears to be increasing dramatically along many parts of the east coast. These indicators probably are due in large part to the protection afforded stocks by the FMP and the Conservation Act.

While these developments are indeed encouraging, what is abundantly evident from state and federal biologists is that striped bass stocks are not yet out of danger. Despite improved reproductive success in some areas, other vital areas such as the upper Chesapeake Bay, are still yielding

low reproductive success, apparently due to poor habitat conditions. Despite improved adult abundance, the stocks continue to be composed predominantly of a single major year class, that of 1982. Because striped bass fisheries have historically been maintained by dominant year classes, additional strong year classes are needed to ensure the long-term health and recovery of the stocks. Of particular concern is that New Jersey has passed legislation to liberalize harvest of striped bass in state waters upon expiration of the Conservation Act. This situation exemplifies the parochial political pressure to liberalize harvest and ultimately threaten the effectiveness of the FMP and progress made to date with striped bass.

These factors, combined with the ongoing need for the collection of data on striped bass stocks mentioned above, demonstrate the need for a three-year reauthorization of these two pieces of legislation.

Conclusion

The NWF supports S. 2384. The Emergency Study and the Conservation Act have been effective in protecting and conserving striped bass stocks on the east coast. These stocks appear to be recovering, yet all signs point to a continued need for rigorous harvest restrictions as the stocks return to health. Therefore, the need continues for the reauthorization of these pieces of legislation embodied in S. 2384.

We appreciate the opportunity to provide these comments, and look forward to continuing to work with the Subcommittee on striped bass conservation. Thank you.

II

100TH CONGRESS
2D SESSION

S. 2384

To authorize appropriations to carry out the Atlantic Striped Bass Conservation Act for fiscal years 1989 through 1991, and for other purposes.

IN THE SENATE OF THE UNITED STATES

MAY 12 (legislative day, MAY 9), 1988

Mr. MITCHELL (for himself and Mr. CHAFEE) introduced the following bill; which was read twice and referred to the Committee on Environment and Public Works

---

A BILL

To authorize appropriations to carry out the Atlantic Striped Bass Conservation Act for fiscal years 1989 through 1991, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. AUTHORIZATION OF APPROPRIATIONS.

Section 7 of the Atlantic Striped Bass Conservation Act (16 U.S.C. 1851) is amended by striking "and 1988," and inserting in lieu thereof "1988, 1989, 1990, and 1991,".

SEC. 2. EFFECTIVE PERIOD.

Section 9 of the Atlantic Striped Bass Conservation Act (16 U.S.C. 1851) is amended by striking "1988." and inserting in lieu thereof "1991.".

SEC. 3. FUNDING OF STRIPED BASS STUDIES.

Section 7(d) of the Anadramous Fish Conservation Act (16 U.S.C. 757g(d)) is amended by striking "the fiscal year ending September 30, 1980," and all that follows through "September 30, 1988" and insertig in lieu thereof "each of the fiscal years 1988, 1989, 1990, and 1991".

○

S 2384 IS

87-089 (96)